# American Artisan

Founded 1880

The Warm Air Heating and Sheet Metal Journal

Vol. 96, No. 6 CHICAGO, AUGUST 11, 1928 $2.00 Per Year



## Built for Big Jobs

EVERY year, an increasing number of Success Heaters are installed in schools, churches and other large buildings. Success dealers have found this business well worth going after, for such jobs run into real money.

The Success Power Plus and Heavy Duty heaters are made for the larger installations. Big, powerful heaters, they deliver plenty of heat at an economical cost, and will stand a lot of hard use. Besides, we cooperate with dealers in laying out big jobs, to help assure satisfaction.

Perhaps the Success franchise is not being utilized in your locality. Why not find out now, what we have to offer? We can refer you to plenty of dealers who will tell you we have a real proposition.

**SUCCESS HEATER MFG. CO., DES MOINES, IA.**


MOST people's idea of a bargain is a good product at a fair price. Surely, then, a better product at the ***same*** price is doubly a bargain.

Lamneck round tin pipe and fittings were always a bargain—a ***good*** product at a fair price. Now that they have the advantages of the Lamedge joint at no extra cost they are more than ever a bargain. They make all ordinary round tin pipe and fittings costly by comparison — they are so much ***better.*** Better pipe and fittings save your time and your money, and enable you to give your customer quicker service and a more workmanlike job. Such fittings are ***worth*** more to you. Surely ***when improved fittings cost no more*** it is common sense to use them.


Why not prove the convenience and superiority of Lamneck round tin pipe and fittings to your own satisfaction? ***Use them on your next job.***

THE W. E. LAMNECK COMPANY, 416-432 Dublin Avenue, Columbus, Ohio

# LAMNECK SIMPLIFIED PIPE AND FITTINGS

# Meeting Public Demand —Creating New Sales Opportunities

*These are* Vernois *Contributions to the Up-and-Going Furnace Dealer*

*IN every part of the country VERNOIS leadership has been maintained by consistent accomplishments.*

*DEALERS are today, more than ever, turning to the VERNOIS line to meet their every requirement.*

**Vernois**

**FURNACES**

THEIR greater value is proved instantly by a moment's comparison. All you need do is to list the features of other furnaces in the same price class. Then VERNOIS superiority is startlingly clear. And its finer performance! A few days' demonstration will settle that point.

*Write for the VERNOIS proposition now*

**Mt. Vernon Furnace & Mfg. Co.**
**Mt. Vernon Ill.**


Published Weekly by American Artisan and Hardware Record, Inc., 620 South Michigan Avenue, Chicago, Illinois. AMERICAN ARTISAN—the Warm Air Heating and Sheet Metal Journal—entered as second class matter, March 26, 1928, at the Post Office at Chicago, Illinois, under act of March 3, 1879. Formerly entered on June 25, 1887, as American Artisan and Hardware Record.

# IF YOU WANT

to see the most modern---most complete---most desirable furnace obtainable you will find it in our

## *New* FAULTLESS - - *Series* C

This is NOT just another standard style heater, but is the BEST THAT MONEY CAN BUY---with so many superior features that our customers keep telling us that they never saw its equal.

*When you see it you will agree. It will repay you to look into it. Full information and attractive prices on application.*

**The GRAFF FURNACE CO.**

116-118 Wooster Street NEW YORK, N. Y.

**It Takes More Than Materials to Make a Good Warm Air Furnace**

**Skill in construction and design,**
**A trained operating organization,**
**Broad business policies,**

**are most often found where the manufacturer has shown for years a consistent record of growth as a result of right relationship with dealers.**

**Our three huge foundries are evidence of this success and the popularity of our products with the trade.**

***May we help make your business a greater success?***

**THE FOREST CITY-WALWORTH RUN FOUNDRIES CO.**

1220 MAIN AVENUE FURNACE DIVISION CLEVELAND, OHIO

*(Member Nati nal Warm Air Heating Association)*

*Say you saw it in AMERICAN ARTISAN—Thank you!*

January 9, 1928

Hess-Snyder Co.,
Massillon, Ohio.
Gentlemen:

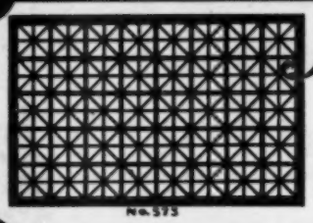
I have one of your cast iron furnaces which has been in use since 1888 and is good yet all excepting the water pan which is rusty and I wish you would send me a new water pan.

Yours truly,
(Signed) Charles D. Eliot,
317 Third Avenue North,
Great Falls, Montana.

**We invite any manufacturer of furnaces to show a better record.**

The HESS-SNYDER COMPANY
MASSILLON, OHIO
*Makers of BOOMER FURNACES for Forty-Three Years*

Wrought Steel H&C And Bronze
GRILLES



*for all grille requirements write*
*The Hart & Cooley Mfg. Co.*
*New Britain, Conn.*

No. 575 No. 578 No. 575 No. 590

"GEM" ADJUSTABLE REGISTER SHIELDS

Impress your customers with the fact that "Gem" Adjustable Register Shields, adjustable from 10 to 19 inches, *save fuel* by deflecting the heat down into the room instead of wasting it on the ceiling. "Gem" Floor Shield, Black retails at $1.25; Ox. Cop. at $1.50; "Gem" Wall Shield, Black, 65c; Ox. Cop., 75c.

1140 BROADWAY, NEW YORK, N.Y.

BE&H CO

*BUY FROM YOUR JOBBER*

BRILLION
PORTABLE VACUUM
*ELECTRIC FURNACE CLEANER*

If you are a live dealer you know what other men are making with cleaner work--

If you want the key to prospective customer's basements get a BRILLION cleaner NOW —don't delay!

Let us tell you about this wonderfully designed and constructed furnace cleaner.

*JUST SEND THE COUPON TODAY!*

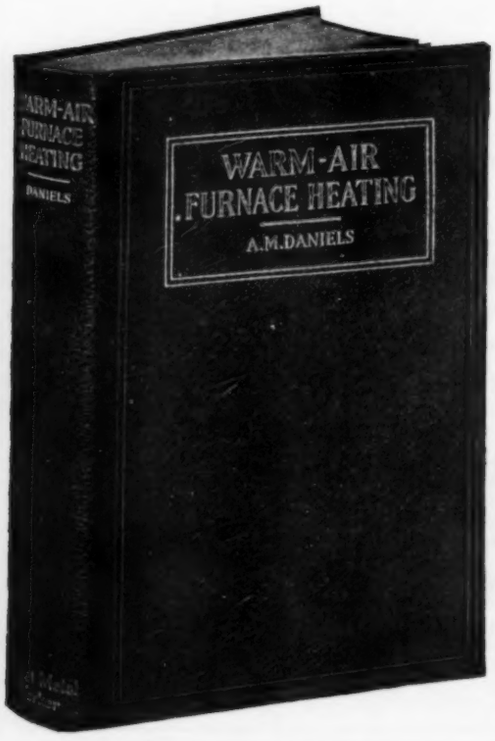
BRILLION FURNACE COMPANY, A. A.
17 No. La Salle St., Chicago. 200-300 Park Ave., Brillion, Wis.

Send me full details on the BRILLION FURNACE CLEANER.

*Name*.....

*Address*.....

# A New Book on Warm Air Heating




IT IS the book that thousands have been asking for—a book on Warm Air Furnace Heating that is UP-TO-DATE—a book that covers ev ry phase of the subject giving exact data based on research work

Written by A. M. Daniels.

Here is the book that will enable both the experienced furnace man and the student to obtain a working knowledge of up-to-date scientific warm air furnace heating.

Read over the Chapter Headings—notice the complete treatment of the subject.

Many tables are included and some big labor savers in calculating pipe sizes—also many diagrams.

## Chapter Headings

1. Historical.
2. Typical Gravity Pipe Warm-Air Heating Systems.
3. Types of Warm-Air Furnaces.
4. Details of Furnace Construction.
5. Heat Losses.
6. Effect of Register-Air Temperature, Leader Area and Size of Wall Stack Upon Heating Effect Produced.
7. Insulating Coverings and Their Effect Upon Leader and Wall Stack Operation.
8. Casing Diameter vs. Furnace Capacity.
9. Air Supply to Furnace.
10. Furnace Capacity and Rating.
11. Register Grilles vs. Plant Capacity.
12. Chimneys and Flues.
13. Humidity.
14. Evaporating Pans.
15. Combination Heating Systems—Warm Air and Hot Water.
16. Gas Warm-Air Heating.
17. Oil-Burning Warm-Air Heating.
18. One-Pipe Furnace Heating Including Modifications.
19. Hot-Water Supply.
20. Leader Pipe Sizes.
21. Forced-Air Furnace Heating.
22. Coal as Fuel.
23. Pipe and Fittings.
24. Warm-Air Registers and Cold-Air Faces.

*450 pages, 7x9 inches*

*Bound in semi-flexible imitation leather--*

*Stamped in gold--*

*PRICE $5.00 POSTPAID*

*Send in your order today*

**AMERICAN ARTISAN,**
**620 So. Michigan Ave., Chicago, Ill.**

**Enclosed find $5.00 for which send me WARM AIR FURNACE HEATING by A. M. DANIELS.**
**10% discount allowed on book and new or renewal subscription if ordered together.**

*Name*.....

*Street Number*.....

*Town*.....*State*.....

# LIQUID ASBESTOS

*Something Better and Entirely Different*

ELIMINATES THE USE OF ASBESTOS PAPER
Liquid Asbestos is a white covering for old and new furnaces

IT'S FIRE AND WATERPROOF
MAKES ALL PIPES AND FITTINGS 100% SEAMLESS

*A tailor made suit for every furnace — it spreads with a brush*

Never in all furnace heating history has anything so completely jumped into such popularity

LIVE WIRE FURNACE DEALERS ARE INCREASING THEIR SALES WITH THE USE OF LIQUID ASBESTOS

*Ask your Supply Jobber or write for Dealer's Proposition today*

B. & F. MANUFACTURING CO. 333 South West 6th St. DES MOINES - IOWA

# "American Seal" FURNACE CEMENT

***Roof Cement — Stove Putty***
***Plumbers Putty***

PAINTS and SPECIALTIES

WILLIAM CONNORS PAINT MFG. CO.
TROY *Established 1852* NEW YORK

JAMES L. PERKINS
Western Distributor
140 S. Dearborn St., Chicago, Ill.

# BOLTS

WE MANUFACTURE A COMPLETE LINE OF BOLT PRODUCTS, INCLUDING STOVE BOLTS, CARRIAGE BOLTS, MACHINE BOLTS, LAG BOLTS, NUTS, COTTER PINS, ETC. ALSO STOVE RODS, SMALL RIVETS AND HINGE PINS. CATALOG ON REQUEST.

THE LAMSON & SESSIONS CO.
THE KIRK-LATTY CO.
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# PATTERNS FOR STOVES AND HEATERS

THE CLEVELAND CASTINGS PATTERN COMPANY
CLEVELAND, OHIO

# PATTERNS

FOR STOVES AND HEATERS FIRST-CLASS IN WOOD and IRON
VEDDER PATTERN WORKS ESTABLISHED 1835 TROY, N. Y.

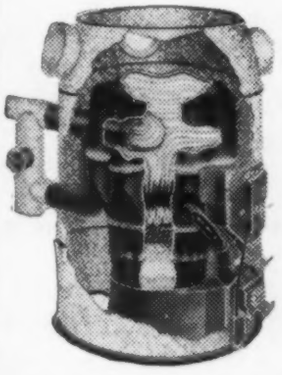
IRON AND WOOD
# STOVE PATTERNS
QUINCY PATTERN COMPANY
QUINCY, ILLINOIS

THE PIPE AND ATH-A-NOR PIPELESS FURNACE

# *and its remarkable* SMOKELESS *feature--*

will make big profits for you, too--- hundreds of Ath-A-Nor dealers have increased sales each year because a man who has a *Smokeless* furnace soon tells his neighbors all about it.

ATH-A-NOR pioneered in *Smokeless* furnace construction --- it was one of the first to study the problem thoroughly. Today it has the most distinctive and efficient *smokeless* construction.



Its famous Three-Way Air Blast is *Patented*---no other furnace enjoys a construction like it.

Write for full illustrated details which show you why home owners prefer the Ath-A-Nor.

*The Ath-A-Nor Agency is different--Ask about it now*

## The May-Fiebeger Furnace Co.
Newark, Ohio

Founded 1880

Published to Promote Better Warm Air Heating and Sheet Metal Work

# American Artisan

The Warm Air Heating and Sheet Metal Journal

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Vol. 96, No. 6 — CHICAGO, AUGUST 11, 1928 — $2.00 Per Year

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## AN OPPORTUNITY

*At the recent conventions of the National Association of Sheet Metal Contractors and of the National Warm Air Heating Association some very fine programs for carrying on the activities for betterment of the industries were promulgated. But it is not sufficient to expect committees to do all of the work. Every sheet metal contractor and warm air heating man should take it upon himself to offer his ideas and suggestions as to how best to work out these programs.* AMERICAN ARTISAN *gives you an opportunity to have your views aired. Let us have them. In this way they will come to the attention of the committee chairmen.*

# HANDY PIPE

No. 16 Elbow

*The famous pipe with the*

## EASY AIR FLOW

No. 10 Boot

No. 12 Boot and No. 6 Angle

THE best workmanship—Union made—the best construction — patented design — the finest material—extra heavy durable for real service—*easy to use.*

*Our catalog tells all about it---have it on hand---write for it today*

No. 12 Boot and No. 6 Angle

## F. MEYER & BROTHER CO.

PEORIA, ILLINOIS

# Rise Above the Average with this *Seamless* Steel Furnace

WATERBURY dealers get the better jobs with MORE than average profits. They do not have to compete with the rank and file on a price basis. They are able to offer the greatest advances in warm air heating—advantages obtainable in no other furnace.

*A seamless,* heavy welded steel body and radiator—no cement, no calking, no cast iron joints—absolutely gas-tight throughout its life. Even the steel front is welded.

*Controlled Humidity*—not simply a water-pan, but all the moisture desired, evenly distributed. Automatic if desired.

*Greater Economy*—a special radiator for each size furnace. No undersized radiators.

*Certified Standard Code Capacity,* designated by metal plate.

As Waterbury leads the field in warm air heating advancements our dealers lead in sales. In the last 12 months they again broke all previous records. *If that's the kind of progress* you're interested in, mail us the coupon and get full information.


The Waterman-Waterbury Co.

1122 Jackson St., N. E.
Minneapolis, Minn.

Please send me immediately full details of the New Waterbury and your agency proposition.

Name.....

Address.....

.....

*Complete Stocks carried in*

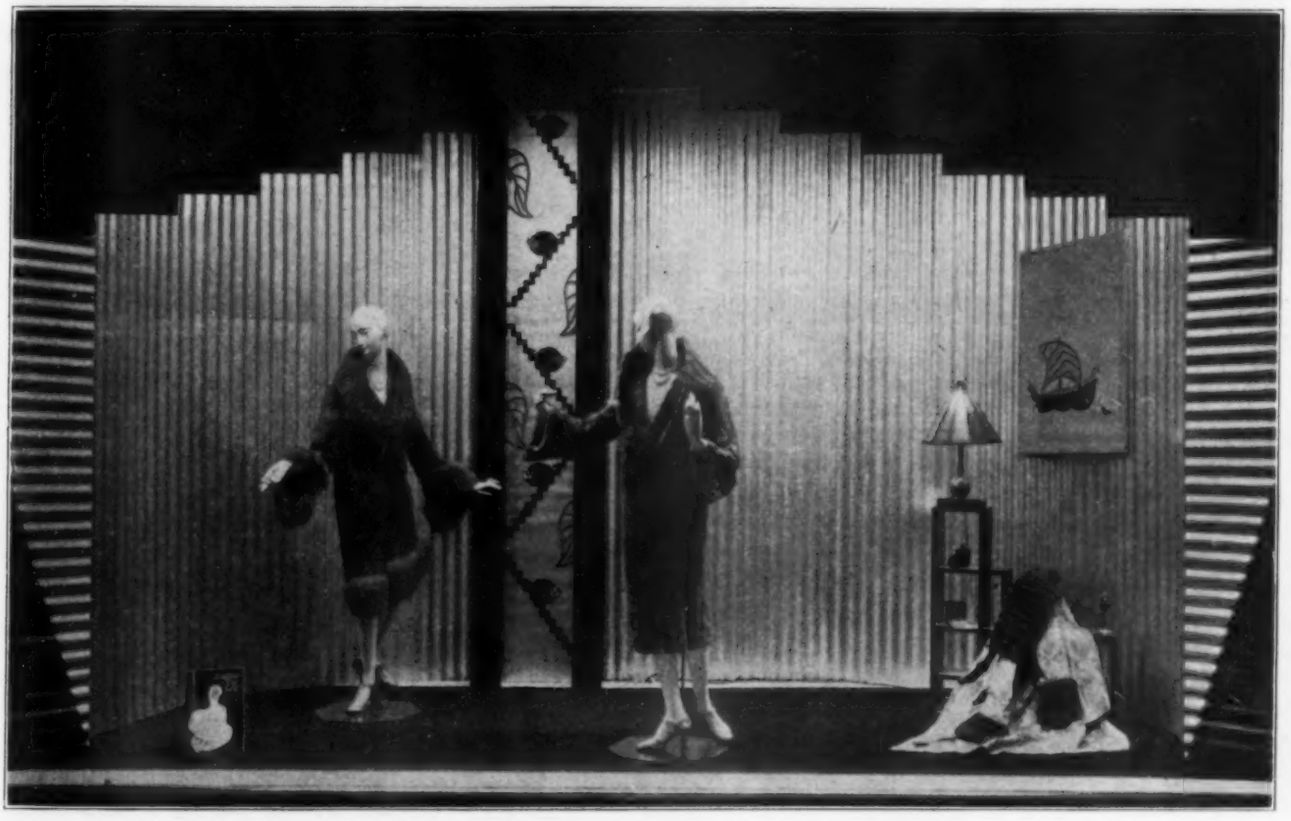
Philadelphia, Pittsburgh, Albany, New Orleans, Kansas City, Denver, San Francisco and Seattle.

American Artisan
The Warm Air Heating and Sheet Metal Journal

Vol. 96 CHICAGO, AUGUST 11, 1928 No. 6

# *Sheet Metal Work Now Brought to the Artistic Stage by Use in Display Window Trim*

## *Possibilities for Artistic Design with Sheet Metal Almost Unlimited One Display Director Finds*



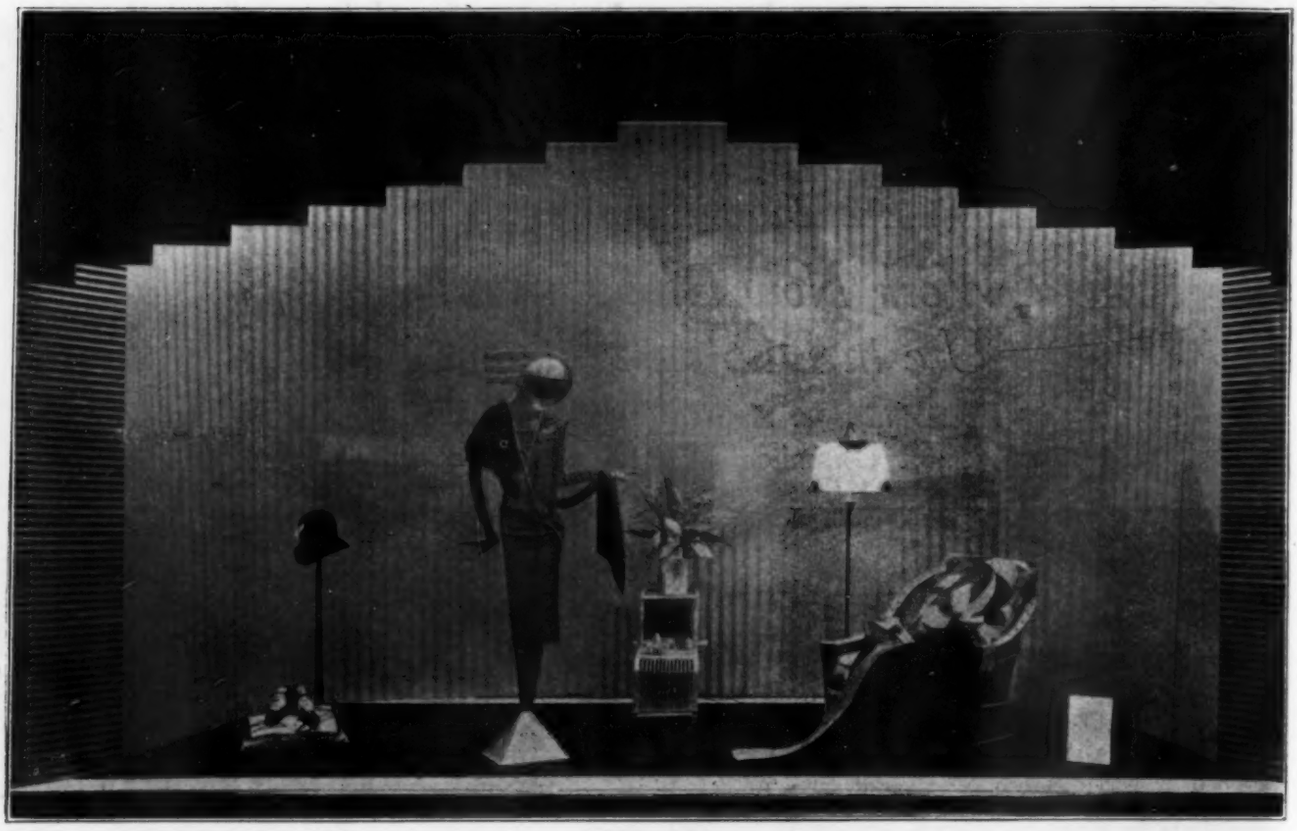
**Display Window of the William H. Block Company, Indianapolis, Indiana, Showing an Innovation in the Use of Sheet Metal. In This Particular Window 2½-inch Corrugated Metal Was Used**

"THIS modern world brings leaders forward whose merits are severely viewed by the age of good taste.

"With proof of two unique windows entirely enclosed with corrugated metal for a background, with a modern step valance of sheet metal and a modern metal figure displaying the garment to wonderful advantage, we are enclosing five windows in this manner for our modern settings and with our local metal worker, Joseph Gardner, we are now working up a metal modern setting for the largest style show ever staged in Indianapolis."

Thus does A. Roeder, Display Director of the William H. Block Company, Indianapolis, Indiana, characterize the advent of the use of corrugated sheet metal into a field that has so far been almost entirely neglected by the sheet metal contractor, but one which bids fair to account for the use of an increasing tonnage of metal sheets in the very near future.

Joseph Gardner, who operates the Joseph Gardner Company, 147 Kentucky Avenue, Indianapolis, and who is a past president and a director of both the National Association of Sheet Metal Contractors and of the Indiana Sheet Metal and Warm Air Furnace Association, and of the Indianapolis Board of Trade, gives the following description of the work depicted in the photo-



**Still Another Window of the William H. Block Company, Indianapolis, Indiana. The Stepped Valance of These Windows Was also Made of Sheet Metal. In This Window the Corrugated Metal Was 2½-inch Material and They Were Designed by Joseph Gardner, Indianapolis**

graphs:

"The illustrations show something unusual in show window trimming, and it might be interesting to the sheet metal trade, and similar designs with various modifications could be used elsewhere.

"The background is made of 2½ inch corrugated iron, ten foot high, and the cross corrugated iron in front is 1¼ inch for one window and 2½ inch for the other window. After a trial we considered the 2½ inch cross corrugated iron in the front pieces, the most artistic.

"The valance is made of flat sheets (not crimped) with a 1-inch square bead around the inside of the entire bottom, which you will see on careful inspection. The valance in the pictures gives the idea that the valance is black, but that is evidently done in taking the photo, as the actual color of the valance is the same as the background of the window, one of which is gray and the other silver.

"The decoration of the sheet metal is not permanent, as various colors will be sprayed on the metal from time to time to correspond with the merchandise shown in the window. The initial cost of the material and erection of same will be about the only expense for some time to come in the window decoration."

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## National Metal Lath Manufacturers Resolve

At a meeting of the National Metal Lath Committee of the National Builders Supply Association held at the Ohio Hotel, Youngstown, Ohio, recently, the following resolutions were adopted, same to be presented to all manufacturers of metal plastering materials:

(1) Strictly 100 per cent protection of dealer differential (or discount) in all territories. Whenever necessary to quote contractors or consumers, quote only consumers' price of metal lath, channels, bead, and metal plastering accessories.

(2) No blanket contracts, specific job contracts only either by manufacturer or dealer.

(3) Adoption of standard list price with dealer discount on both carload and less carload shipments.

(4) Request manufacturers to furnish Metal Products Commodity Chairman on sufficient notice to furnish a Metal Lath Association representative to disseminate metal lath information and up-to-date modes and uses and to furnish such assistance as necessary in building code activities. Manufacturers request the National Chairman to call joint meetings of the Dealers' Committee with manufacturers at least quarterly.

Committee appointed by manufacturers:

Wharton Clay, Associated Metal Lath Manufacturers, 123 West Madison Street, Chicago.

W. B. Turner, Genfire Steel Company, Youngstown, Ohio.

M. C. Brown, Berger Manufacturing Company, Canton, Ohio.

# *How Changing Conditions Force the Use of a Higher Type of Salesmanship*

## *Why Consumer Preference Can Be Directed Into Proper Channels*

THE chief executive of a large manufacturing company was recently reported to have said: "Ten years ago, even five years ago, manufacturers seemed to believe that business was first a process of manufacturing an article and then of finding a market for it. We are just beginning to understand now that the selling should precede the manufacturing."

This manufacturer's observation is especially interesting, for he is by training a production superintendent rather than a sales executive. Moreover, the change in business methods which is his theme is a change that is not confined to manufacturing—it has gradually been making its way into all forms of production and distribution—into the minds of plant superintendents, financial executives, advertising men and sales managers alike.

In fact, the idea of "give 'em what they want" is not new. It has merely been overshadowed in the more recent past by the creed of that vociferous cult which has sponsored "supersalesmanship" as a panacea for the distribution problems brought by mass production.

### The Rise of the Super-Salesmen

The first two and a half decades of this century saw such an increase in production facilities and in output as had never been experienced in so short a time. The economies of mass production and the rapid advancement in production *per capita* raised the standards of living and at the same time placed a greater premium than ever on the ability to dispose of the great new quantity of goods and services made available by human ingenuity and mechanical fecundity.

Buyers generally were not accustomed to purchasing and using many of the new products and services which were being made available—or, in many cases, were not accustomed to using them so regularly and in such quantities as their increased spending power made possible. Naturally the field was a fallow one for cultivation by high-powered salesmanship.

With the old order of things, buyers became conscious of their needs and then set about satisfying them. With the advent of the new order, they became able to gratify many more than their old desires, so there ensued a rush by producers and distributors to awaken new desires and to push forward *their* products as the best means of fulfilling these desires.

### Staples Drawn Into the Fight

So energetic were these creators of new needs that the suppliers of those staple goods which people had always bought of their own volition found that their markets were becoming badly cramped. The obvious solution was to combat fire with fire—to pit extraordinary selling efforts of their own against those of their forehanded rivals in the newer fields.

Manufacturers and sellers of shoes, and shirts, and sealing wax, of groceries, dry goods, paints, lumber, hardware, coal and countless other staple lines awoke to find themselves in competition with the manufacturers and sellers of automobiles, oil burners, electric current, radios, motion-picture films, and a whole host of mechanical and electrical appliances that made life irksome and more filled with real enjoyment.

At first we said that people were buying more luxuries. Later we came to realize that there is no sharp dividing line between necessities and luxuries. Einstein showed us that everything is relative. Then, suddenly, right on the crest of a great wave of prosperity, we got another tumble.

The consumer—that mythical character who was being trained to gorge himself with all the products which our mines and farms and factories could turn out and our roads and stores could distribute—the ultimate consumer "got wise." Not of a sudden, it is true, but then it is hard to see changes in their true perspective until we find ourselves face to face with a new condition.

### Buyers More Discriminating

Today we are up against this very real state of affairs: the consumer has become more discerning and more particular as to what he buys. He knows more about the things that are dangled temptingly before his eyes; in brief, he is able to discriminate and he insists on discriminating.

Ten years ago he bought an automobile that he might lessen time and distance by the use of wheels; he bought a vacuum cleaner because it did things better and more easily and more quickly than a broom or carpet sweeper; and five years ago he bought a radio because it was a novelty. But today when he buys an automobile he wants more than quick and convenient transportation; when he buys a vacuum cleaner he wants more than a suction sweeper; and when he buys a radio he wants music.

The same conditions hold true in other fields. Typewriters must be more than mechanical letter writers; an adding machine more than a substitute for mental calculations; a bond more than an interest-bearing certificate of indebtedness; a house more than four walls and a roof.

### Dealing with Overcapacity

Meanwhile our production facilities in many lines have grown far beyond our capacity to absorb their

potential output. The big problem of business is still that of inducing people to buy a constantly increasing output, but the old formula for the solution won't work any more.

Reducing costs through mass production is still a powerful *competitive* method, but not nearly so potent as it once was a stimulator of consumer demand in the aggregate. Driving for bigger sales volume by adding more salesmen, or cracking the whip over the heads of the sales force, or making fresh "injections of pep," or employing more high-powered, persistent "closers"—such driving can no longer be relied on to swell profits.

**Fitting the Product to the Market**

The firms that are making the most money these days are the firms *that are studying the preferences of buyers and adapting their products and services to these preferences.* They are training their salesmen to study the wishes and needs of buyers and to sell the use advantages of their goods as adapted to the buyers' needs.

These successful firms are supplementing production research with market research. They are producing and selling to meet demand and consumer preference. They are following closely the changing trends —never content merely because they *feel* that they have quality products at low costs. They know that both quality and price must meet the acid test of consumer preference.

That's why automobile makers are stressing "lines" and colors and four-wheel brakes, quick pick-up and cigarette lighters. That's why malted milk manufacturers are featuring a chocolate-flavored product instead of the old-style health food for infants and invalids. That's why phonographs are being designed to reproduce music through radio tubes and loud speakers; and why all-electric radio sets are practically the only ones currently advertised.

We're in a buyers' market, but not solely because potential supply is greater than demand. The buyers have largely made their own market. Profits come to those who cut their cloth to the market.—*Business Bulletin La Salle Extension University.*

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**A Direct Proof That Apprenticeship Training Accomplishes Its Object**

Revelation is made that individuals who had entered trade apprenticeship in the State of Wisconsin previous to 1923 and who completed the apprenticeship training are earning 40 per cent more than those who had started and dropped out. Sixty-five per cent of those who had dropped apprentice training have acknowledged that they were earning less than they would have earned had they kept on, while 62 per cent announced that if they had it to do over again they would have kept on with their apprentice work.

Unemployment amongst those who had completed apprentice training was 1 per cent, while it was 9 per cent among those who had canceled indentureships. All of which means that in apprentice training the interests of employer and employe are identical. A man who can earn more money and be in demand sufficiently to avoid unemployment is the sort of person who is most valuable to an employer.

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**Policyholders' Service Bureau Issues Important Pamphlets on Preventing Accidents**

"Getting Facts About Accidents" is the second of a series of pubilcations issued by the Policyholders' Service Bureau of the Metropolitan Life Insurance Company, presenting the basic principles of successful industrial safety work.

This booklet, addressed primarily to the chief operating official, outlines current industrial practice in obtaining and using accident facts as a means of promoting plant safety. It presents convincing evidence of the value of accurate knowledge, concerning how and where accidents occur, on the part of those executives charged with responsibility for keeping informed of the weak spots in the organization and of this cause of excessive production costs. Accident forms are provided, which have been found helpful in recording the necessary facts and making them available for study. There is also given a description of methods by which this information may be put to maximum preventive use.

Copies of "Getting Facts About Accidents" may be obtained by those interested in the subject of accident statistics by addressing the Policyholders' Service Bureau of the Metropolitan Life Insurance Company.

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**Edward Chappelle Company Acquires Factory Building at Syracuse**

Edward C. Chappelle Co., Inc., recently acquired a factory building in Syracuse, N. Y., in which it is to carry on the manufacturing of its furnace pipe.

The building, of stone construction, is 40 by 60 feet, two stories high. Plans are already being made to extend the company's business over a much larger territory than heretofore.

The company is already preparing to equip its factory and is in the market for heavy sheet metal working machines and tools.

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**Calkins & Pearce Describe Latest Development in Gas Furnaces**

A folder has been issued by Calkins & Pearce, 751 East Long Street, Columbus, Ohio, describing four types of the Rex warm air gas furnace, manufactured by that company.

The first is the Rex No. 290 gas furnace, having three burners and two pilots. The second is the No. 290 unit. Then there is the No. 280 unit and the No. 480 gas furnace.

Each one of these furnaces and units is described in some detail, with illustrations, and the uses for which it is best adapted is also related, together with the reasons for each.

This folder can be obtained by

anyone interested in learning the latest developments in the gas furnace field by writing to Calkins & Pearce at Columbus, Ohio.

### New and Instructive Booklet on Oxwelding and Cutting to Be Had Free

Of especial interest to the sheet metal trade at this time is the new release of the Oxweld Acetylene Company in the form of a booklet, "Oxweld," describing various methods of oxwelding and cutting, together with the equipment employed in this work.

Any sheet metal contractor or worker who is desirous of posting himself on oxwelding equipment will find the booklet of inestimable assistance. The description goes into minute detail and many illustrations have been inserted to enable the student to get a clear and thorough idea of what the equipment consists. For instance there are no less than fifteen types of blow pipe described, as well as illustrated, and the uses to which they are put enumerated. These are given in both hand torch type and the machine weld outfits.

Not only are the oxweld cutting and welding outfits described in full detail, but the acetylene generator, the carbic low pressure generators in numerous types, carbic floodlights are also passed in review for the reader. The outfit used for decarbonizing automobiles is also described in detail.

Copies of this most interesting and instructive booklet on oxwelding and cutting can be had free by writing the Oxweld Acetylene Company, Room 401, 30 East 42nd Street, New York City. Write for it immediately.

### Home Modernizing Movement Getting Under Way

The home modernizing movement, sponsored by the Home Modernizing Bureau, an organization of members of the building fraternity, of which Walter J. Kohler, president of Kohler Company, is president, is getting under way in a number of cities throughout the country, and many others have signified plans of starting such a movement.

Campaigns are already under way in the following cities: Minneapolis, Minn.; Springfield, Ill.; Kansas City, Mo.; Kansas City, Kan.; Bloomington, Ill.; Topeka, Kan.; Quincy, Ill.; Atlantic City, N. J.; Decatur, Ill.; Milwaukee, Wis.; Spokane, Wash.; Cleveland, Ohio; Florence, Ala.; Spencer, Iowa. Washington, D. C., is just about ready to start its campaign, accord to reports. In all of these cities, plumbing and heating contractors, wholesalers and manufacturers have been prominent in the modernizing movement.

Thirty-five of the leading building and trades organizations of Milwaukee have already taken up the movement.

Walter J. Kohler described the steps that led to formation of the bureau at a recent dinner in Milwaukee. "There are about 26,000,000 homes in the United States," Mr. Kohler said. "About half of these are not modern. Hundreds of thousands are not even equipped with what today we consider the necessities of life. This generation has somewhat lost its pride in the home. People are satisfied to live in a two-room apartment. A generation ago there was real pride in the home, its garden and other surroundings."

H. K. Nygaard of Chicago told members attending the dinner that 14 cities and towns in the United States have organized and are carrying on campaigns. He cited Kansas City, Mo., Topeka, Kan., and Minneapolis as typical of the cities that have successfully waged campaigns that resulted in a real stimulus to business.

### Louisville Sheet Metal 19 at Fern Creek to Picnic August

The Sheet Metal Contractors' and Roofers' Association of Louisville, Kentucky, will hold its annual outing at the Fern Creek Fair Grounds, August 19. The affair will be in the nature of an old-fashioned picnic.

"The committee has arranged a great chicken dinner," says Winston Johnson, secretary of the association, "with plenty to eat and to drink, with the necessary servants to do the work, and all paid for by the association.

"For the last several years this picnic has been at the above-mentioned place, and such good times have been had on previous occasions that everyone was anxious to have the same kind of a picnic this year."

### Motion in Windows Attracts Attention When Done with Care

Window Trimmers have capitalized the fact that people's eyes naturally follow motion. It is time for salespeople to realize that same fact, and to apply the knowledge both for and against motion in selling.

The salesman may use motion to advantage in demonstration of some movable part of the object he is showing, as by spinning the wheel of a cart, a wheelbarrow, or some mechanical device, or by operating a lever or thumb-screw. By setting in motion the device intended to move, the customer's attention is better secured and held.

But the salesman needs to bear in mind that motion may distract the customer's attention, as in the case of a nervous movement of hand or foot or body, or the playing with some object not connected with the sale, as a lead pencil or order pad. Motion may make or break a sale and a little intelligent consideration of its use or abuse is necessary.

### W. D. Walker Goes With Premier at Dowagiac, Mich.

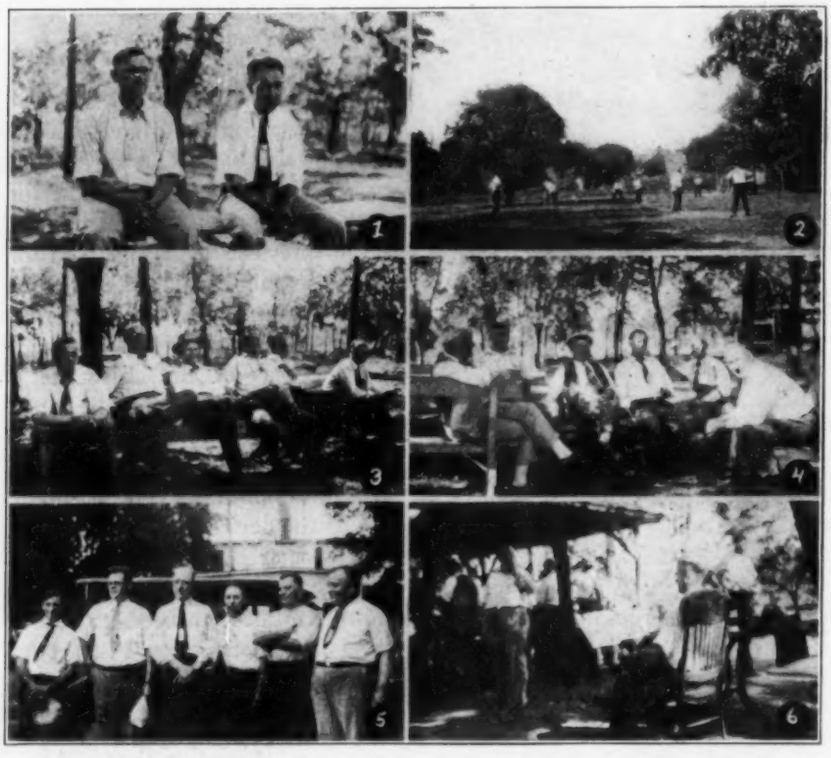
H. D. Walker, associated for several years with R. W. Menk in the Heating Service and Systems and later in the Heating Systems division of the Robinson Furnace Company, Chicago, has accepted a position with the Premier Warm Air Heater Company, Dowagiac, Michigan. Mr. Walker has already moved to Dowagiac.

# *Wisconsin Sheet Metal Contractors Hold Annual Old Time Picnic*

### *Fine Weather and Past Good Times Bring Out Large Gathering on August 8*

THERE'S a spot in Wisconsin designated as Knepel's Grove, Mequon, just about fourteen miles south of Milwaukee, that by now is well known to many Wisconsin sheet metal and furnace men, not to mention their many out of town friends.

istered and by noon everybody was dusted off after a hot drive and ready for the big feed. Such a feed they set up—a regular German roast beef dinner with all the trimmings! Even the automatic violin and piano played the good old German tunes and it wasn't long before



**1. T. E. Tonnsen and H. P. Mueller watching the ball game. 2. The annual ball game in spite of the heat and humidity. 3. C. E. Baumann, G. H. Eggert, C. W. Pansch, A. Schuman and Harry Christman, encouraging the ball players to show some pep. 4. Fred L. Luedke, E. S. Eaton, R. Klubertanz, Ben Huismann, E. D. Green and Jos. M. Hollitz just talking about every old thing. 5. Ed. Wilburth, Glenn Holford (who came all the way from Georgia to be with the old gang for a day), Harry Christman, Wm. Schmeling, Archie Scheder and Lew Soper. 6. This fellow and his concertina encouraged the boys to sing all those good old German songs.**

A cool secluded spot where one may forget the noises and bustle of the city and where one may have a wonderful time—with the Wisconsin boys.

The picnic committee certainly has a drag with the weather man as this day was again one of the summer's finest.

Upwards of a hundred men reg-

Louis Eschenburg, Paul Biersach, A. Schumann, Fred Luedke and many others lifted their voices in song.

They all strolled back to the shade of trees to rest, enjoy a cigar and talk.

Few thought a ball game would be played—it sure was hot in that sun, but after a brief rest, the more hardy ones started in and the game was on. H. H. Wherry was the prize fielder. No one knew which side won or what the actual score was. Everybody was having too good a time to care much.

At the same time there was in progress several games of pinochle and bridge, while a short distance away Moxey George and George Jordan were engaged in winning two games of horseshoes from H. H. Wherry and Harry Christman.

And so the afternoon speeded on with intermissions now and then for a cool glass of coca-cola, pop or gingerale.

Soon it was time to eat again and everybody was hungry.

Henry Pluckhan took over Louis Eschenburg's job of sizzling the sausage, as Louis was busy elsewhere. Henry called for help, though, and soon several volunteers were on the job assisting with the charcoal stove, as all the boys were impatiently waiting with their buns for their sizzled sausages.

Ralph Gehring was another busy boy, always on the job.

Good fellowship marked the day, many old times were talked about and many new friends made.

There's something about these annual Wisconsin picnics that makes one look forward to the next one—it's the good spirit of the boys, the fine work of the committees and the intoxicating Wisconsin air. Next summer is almost too long to wait to attend the next one.

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**Girl Narrowly Escapes Being Struck by Falling Stone Cornice**

The public is brought to a grim realization that the use of stone cornices is fraught with grave dangers every now and then. It happened again on one of the busiest streets in Chicago Monday, August 6, when a 7-year-old girl narrowly escaped being struck and killed by a 25-pound piece of stone, former part of the cornice on the Lytton building, State Street and Jackson Boulevard, crashed from the tenth floor to the sidewalk in front of her.

# Random Notes and Sketches
## By Sidney Arnold

"The essence of humor is sensibility; warm, tender fellow-feeling with all forms of existence."—Carlyle.

The accompanying illustration is that of James Edwin Poe, 3-year-old son of Ralph W. Poe, 44 White Court, Canton, Illinois. Mr. Poe, as all Illinois sheet metal contractors will recall, was recently elected secretary of the Illinois Sheet Metal Contractors' Association. He sent the picture in with the comment, "if a 3-year-old boy can catch a fish (referring to the 2-pound black bass in the picture) like this, what could a man do?"

**James Edwin Poe**

He also says, "Business is almost too good. Fishing the same way. If you have any fishing fans, send them down this way."

This all sounds very good, but anyone who has studied the history of American literature knows that there was a gentleman by the name of Poe who carved for himself an immortal nich in literature and he was enabled to do this because he was gifted with a very, very fertile imagination. Whether our Mr. Poe has any connection with the famous Poe of literature I do not know, but if any of you readers are anxious to find out, you might write Mr. Poe and arrange for a fishing trip with him.

Mr. Poe was also recently elected to membership in the Canton Rotary Club, and is now one of those full-fledged Wowsers so aptly described by H. L. Mencken, who are continally breaking into the local papers. Well, I want to congratulate you anyway Ralph on your rise to fame. I know that if you're not proud of the little boy in the picture, you certainly are the meanest man in the world, but your generous invitation for a fishing trip shows that you are not that.

* * *

### A Good Fellow

"What's the price of this coat?" asked the lady customer of the proprietor of a clothing store.

"That one is fifty dollars," was the reply.

"Too cheap," sighed the lady. "I want a coat of quality."

The clothier shuffled up the coats and produced the same one. He offered it for a hundred dollars this time, and the lady bought it.

After she had gone, a minister who had been standing nearby came over and said, "Can you account for the right of that in the Scriptures?"

"Sure," said the clothier. "She was a stranger and I took her in."

* * *

### All There

He: You look like a sensible girl. Let's get married.

She: Nothing doing. I'm just as sensible as I look.

* * *

### Needless Commotion

W. R. Haines, Ames, Iowa, was suffering from a nervous headache following his trip to Chicago and was trying to sleep it off in the library. Maggie, the maid, descending the stairs with a vacuum cleaner and some crockery in her arms, tripped halfway down and fell the rest of the distance, arriving with a tremendous clatter.

"I suppose you've broken everything, including your head!" roared Mr. Haines in a rage.

"No, sir," replied the girl, meekly. "Not a thing broken sir."

"Then," bellowed the master, "what did you have to make all that infernal noise for?"

* * *

### "Scientific" Accounting

Harry Neal of the Hall-Neal Furnace Company, Indianapolis, who had a lot of trouble in getting a certain retail client to pay his bills —not to pay them promptly, but to pay them at all. Finally, losing patience, he wrote the merchant in question a rather threatening letter and, in reply, received the following communication:

Dear Sir—What do you mean by sending me a letter like the one you wrote on the tenth inst.? I know how to run my business.

**Harry Neal in His Best Count of Monte Christo Pose**

Every month I place all my bills in a basket and then figure out how much money I have to pay on my accounts. Next I blindfold my book-keeper and have her draw as many bills out of the basket as I have money to pay for.

If you don't like my way of doing things, I won't even put your bills in the basket.

# 25 Ways to Inflict Death to Your Association

× × × × × × × × ×

1. Don't come to the meetings. If you do come, come late.
2. If the weather doesn't suit you, don't think of coming.
3. If you do attend a meeting, find fault with the work of the officers and other members.
4. Never accept an office, as it is easier to criticize than to do things.
5. Get sore if you are not appointed on a committee; but if you are, do not attend committee meetings.
6. If asked by the chairman to give your opinion regarding some important matters, tell him that you have nothing to say. After the meeting tell everyone how things ought to be done.
7. Do nothing more than is absolutely necessary, but when other members roll up their sleeves and willingly and unselfishly use their ability to help matters along, howl that the association is run by a clique.
8. Hold back your dues as long as possible, or don't pay at all.
9. Don't bother about getting new members. Let the Secretary do it.
10. When a dinner is given, tell everybody that money is being wasted on blowouts which make a big noise and accomplish nothing.
11. When no dinners are given, say the association is dead and needs a can tied to it.
12. Don't ask for a banquet ticket until all are sold. Then swear that you've been cheated out of yours. If you do get a ticket, don't pay for it.
13. If asked to sit at the speaker's table, modestly refuse. If you are not asked, resign from the association.
14. Don't tell the associations how it can help you, but if it doesn't help you, resign.
15. If you receive service without joining, don't think of joining.
16. If the association does not correct abuses in your neighbor's business, howl that nothing is done.
17. If it calls attention to abuses in your own, resign from the association.
18. Keep your eyes open for something wrong and, when you find it, resign.
19. At every opportunity threaten to resign and then get your friends to.
20. When you attend a meeting vote to do something and then go home and do the opposite.
21. Agree to everything said at the meeting and disagree with it on the outside.
22. When asked for information, don't give it. Curse the association for the incompleteness of its information.
23. Get all the association can give you, but don't give it anything in return.
24. Talk co-operation for the other fellow with you, but never co-operate with him.
25. When everything else fails, cuss the Secretary.

The National Warm Air Heating and Ventilating Association will hold its annual meeting at the Stevens Hotel, Chicago, April 24 to 26. The National Association of Sheet Metal Contractors of the United States will hold its annual convention in Cleveland just a month later. In view of these facts, if you wish to become a very popular conventionite, read over the accompanying 25 ways to destroy your association and carry each and every one of them out to the letter.

**Take an Inventory of Yourself—Does Any of the Above Hit You?**

# *Forming Pattern for Sheet Metal Women's Apparel Display Window Roof*

## *Results in Most Beautiful Piece of Work — Contractor Proud of It*

By O. W. Kothe, Principal St. Louis Technical Institute

RECENTLY a job came to my attention for developing the patterns for the roof of a display window in a large department store in an Ohio city. This display window is a beautiful piece of work in the design of variety of woods as well as its exquisite shape and artistic feeling it produces. It is for the display of women's garments and so requires fine treatment.

The main trouble lies in developing a proper miter line for the side arch segment where it miters with the main roof. The architect made a model of this window from which some idea could be had and even the man who made the model did not obtain the proper intersections for developing this segmental miter. Mention was made that this should be developed to a truer position, and it was, of course, difficult for men not accustomed to geometrical terms to arrive at such a miter without a geometrical basis. So it became a problem of looking at this thing as an elliptical pipe intersected by a smaller elliptical tee. The main span is some 27 feet wide, so that the entire window is of considerable size and too large to be worked full size.

The entire work was laid out to a scale of three-quarter inch to the foot, as we show in this drawing, after which we hope to re-develop the pattern itself to a full size. But after we had everything laid out as we show in this layout, it was found that measurements did not conform between the cabinet factory's work and the architect's model and, therefore, the entire drawing had to be gone over again and made to the new measurements which were substantially as we show here. Owing to the projection of the work it required the sheets to be run sidewise, because material was not wide enough to make one span. The arches themselves were not described by any geometrical process, but were sketches in according to feeling of the draftsman in charge, and this feeling almost made a perfect ellipse, which made it impossible to use any centers at all to work from outside of our vertical and horizontal axis lines.

We, therefore, lay down our front view much the same as we would an elliptical pipe for a quarter plan. Next we drew the plan view, giving the projection of the edges between the front and the back. The front view lines are then treated into equal spaces and lines joined with the points as shown, which were then dropped into plan to make that view. Now owing to the angle of the side wings it was necessary to develop a diagonal elevation view looking through the plan parallel with the side wing. This enabled us to place the side arch and also to use a section through side arch running the lines into plan much the same as a tee branch would intersect the major main pipe. After this the intersecting lines are again carried into the diagonal view for developing the parabola lines. This gives definite intersections for placing the roof of side arch and when this angle is made which was scaled from the model to measure about 17 inches, it produced the angle we show and the lines then intersecting with the parabolas made the line of penetration between the small roof and the large roof. These lines carried back to the plan give the plan view of the segmental miters. When these lines are carried up into front view we then have the edge view of this segmental miter and it enables us to cut them off in pattern as becomes the job.

In developing pattern for such a problem we proceed quite identically the same as for pipe work and so a description is not needed by men who understand this. For men who do not understand this, no amount of describing will ever make it clear until they build up their understanding from first principles in an elementary way.

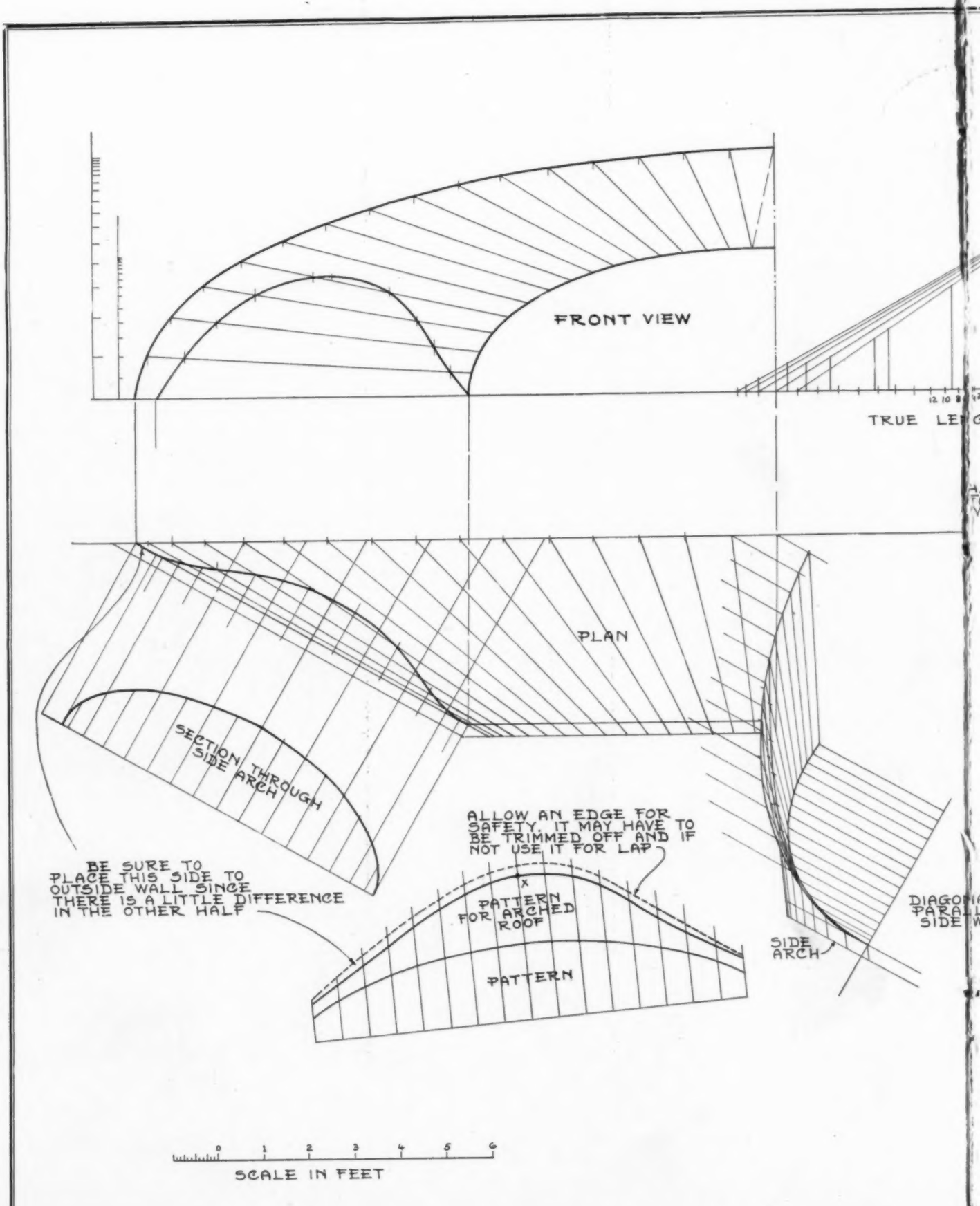
When the pattern is developed, lines can be added on the sides to aid in measuring, or as we did when we measured the width of the sheet on the large end, which was 3 feet, allowing 1 inch for lap so that 36 inches was measured off and the

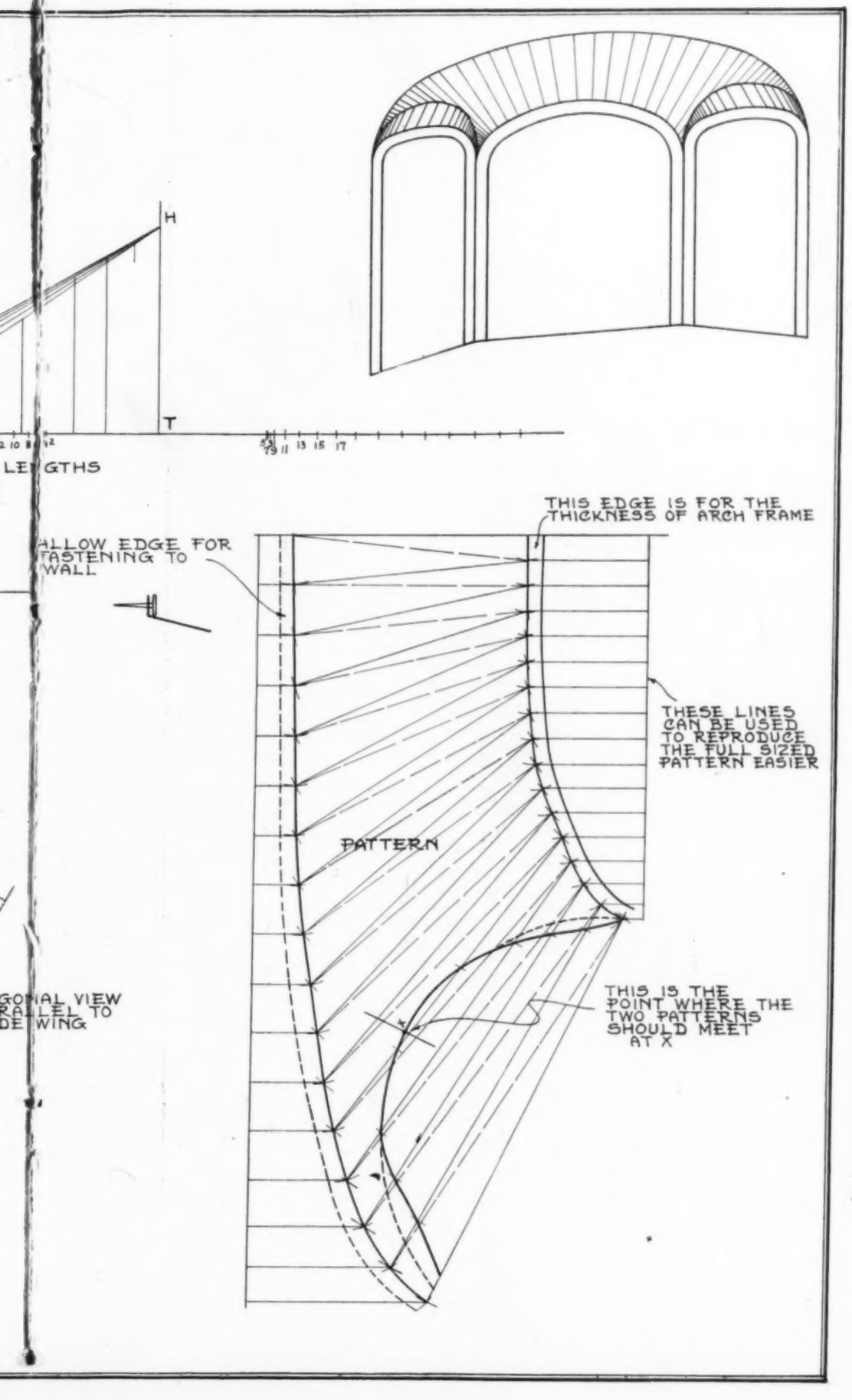
(*Continued on page* 65)

### NOT BUG-HOUSE FABLES

***There are some men interested in the betterment of the warm air heating industry. There's Al Pennig of the Pennig Heating Company, 423 University Avenue, St. Paul, Minnesota. His philosophy of the furnace business may be summed up in the following:***

***"We install all our systems on a heat requirement basis, or in almost every case we use an individual pipe to each room. Seldom, if ever, do we connect an upstairs room with a downstairs, off the same pipe. We also take the cold air out of every room, up and downstairs, and from the outside walls. Our year's sales, up to the 1st of December, 1927, was 156 furnaces, almost all old house work, and our average price per furnace was $430."***


FRONT VIEW
TRUE LE
PLAN
SECTION THROUGH SIDE ARCH
BE SURE TO PLACE THIS SIDE TO OUTSIDE WALL SINCE THERE IS A LITTLE DIFFERENCE IN THE OTHER HALF
ALLOW AN EDGE FOR SAFETY. IT MAY HAVE TO BE TRIMMED OFF AND IF NOT USE IT FOR LAP
PATTERN FOR ARCHED ROOF
PATTERN
SIDE ARCH
0 1 2 3 4 5 6
SCALE IN FEET




*Pattern for Display Window Background Made of Sheet Metal.* *See Pages 51 and 52* *for Actual Display Windows Made of Sheet Metal for the William H. Block Company, Indianapolis, Indiana*

# *Experience Shows Welding of Warm Air Furnaces Is Warranted*

## *Large Building, Bridges and High-Pressure Mains Welded Giving Good Service*

By S. W. Miller, Union Carbide and Carbon Research Laboratories, Inc.

I HAVE read with much interest the article by H. J. Rogers in your issue of July 7th. I am somewhat surprised that at this late date anyone can make the objections that Mr. Rogers has made to welding. Certainly similar work is being done every day successfully, which would seem to warrant the conclusion that the welding of warm air furnaces is well within reason.

Many hundreds of heating units have been constructed entirely by welding, and the American Society of Mechanical Engineers has a code for heating boilers, in which welding requirements are covered. According to this code, which has been adopted by many states and municipalities and which is the standard for construction of heating boilers in this country, welded hot water heating boilers 60 ins. in diameter and carrying 150 lbs. pressure are allowed. Welded construction is also permitted for steam heating boilers up to 15 lbs. pressure, the same as it is in the case of cast iron heating boilers.

As far as high temperatures are concerned, there are several hundred oil cracking stills that have been working successfully at temperatures of 900° F. or more, and under pressures of 600 lbs. or over. Some of these stills are over 4 ins. thick, and so far as is known there has never been a failure. Of course, it would be impossible to rivet any shells of this thickness.

### What About Change in Physical Properties?

Mr. Rogers speaks strongly on what he calls the "complete change in the physical properties of the metal by reason of the intense heat applied in the welding process." This is quite a common idea, but no evidence has been advanced in proof of the statement. One of the published records shows some figures that we had occasion to get on some test pieces whose center was slightly over ¼ in. from the weld in 1⅛ in. thick plate. The mill test figures on the plate were as follows:

| | |
|---|---|
| Ultimate strength | 57,400 lbs. per sq. in. |
| Yield point | 36,500 lbs. per sq. in. |
| Per cent elongation | 30.25 |
| Reduction of area | Not given |

There were nine specimens taken next to the weld. The average figures for these specimens were:

| | |
|---|---|
| Ultimate strength | 59,600 lbs. per sq. in. |
| Yield point | 36,000 lbs. per sq. in. |
| Per cent elongation | 33.5 |
| Reduction of area | 57 |

There also were taken test pieces from the plate about 20 ins. away from the weld. Four of these were transverse and four were longitudinal. These showed an average of:

| | |
|---|---|
| Ultimate strength | 58,500 lbs. per sq. in. |
| Yield point | 38,500 lbs. per sq. in. |
| Per cent elongation | 33.5 |
| Reduction of area | 64 |

I do not think that it can be fairly said that the metal next to the weld had been damaged.

### How to Proceed with Lap Welds

In making a lap weld, both edges of the lap should be welded. If this is properly done, the welded joint will be stronger than the plate. It is bad design to weld only one edge in any important work.

When Mr. Spraragen speaks of the depth of penetration of the molten metal, he undoubtedly refers to the extent which the weld metal penetrates the base metal, and not to the amount of the cross-section of the plate that is welded, which is what is usually meant when the word "penetration" is used. If the entire thickness of the sheets is not welded, the structure is not able to resist heavy stresses, though such work may be all right for unimportant purposes. Where complete penetration is necessary, it may be easily obtained by following proper practices. Mr. Rogers says that in certain tests the weld usually broke first, which indicates strongly that penetration was incomplete. It is perfectly possible for a competent inspector to determine whether thorough penetration has been obtained. There is no danger that a weld will fail in service if the whole design is made for welding, and proper materials and practices are used.

It may be of some interest to know that a twelve-story addition to a hotel is about to be erected by welding; that a number of railroad bridges have been reinforced by the same process by one of the largest bridge companies in the country; that at least five other large buildings are being designed for welding, and that a railroad bridge has been entirely built by welding.

It may also be of interest to recall, as showing the reliability of properly trained welders, that one of the first welded pipe lines, 8 ins. in diameter, 140 miles long, and containing 18,000 joints, was welded quite a number of years ago. There were only four leaks in this entire number of joints, and they were small pinholes which were caulked. During a heavy storm, a part of this line was washed out of the right of way as much as 20 feet beyond the ditch. It was pulled and jacked back into place without any injury to the joints, all the time carrying 750 lbs. oil pressure. It is safe to say that no other form of joint would have stood this treatment.

### In Defense of the Stability of the Welded Joint

I might further state that we have had built in contract shops for the use of one of our subsidiary com-

(*Continued on page* 64)

Fig. 1—Oxwelding top seam of furnace radiator. Fig. 2 (left)—Welding top seam of small residence furnace dome. Fig. 3—Tacking ash and coal chutes.

# *Furnace Manufacturer Finds All-Welded Seams Make Cleaner Furnaces*

## *Oxy-Acetylene Process Seals All Joints Forever Against Leakage of Gas and Dirt*

A CONCERN manufacturing sheet metal furnaces has found in ox-welding the solution of one of its most perplexing problems—how to keep the heating air clean and free from gas and dirt. The experiments which led to the decision to weld all the seams cover a gradual progression from cast iron furnace to all-welded sheet steel construction.

The first furnaces made by this firm were of cast iron, built up one section above another like a bookcase. The joints between the castings were filled with stove putty or furnace cement. When this type of furnace had been in service for a while this cement baked out of the joints and complaints began to come in of gas and dust leakage. In an effort to eliminate this, the next model was designed with a riveted steel dome which worked well until the expansion and contraction caused by the heat of the furnace pulled out or sheared the rivet heads, making the second model nearly as leaky as the first. Even when a third model was tried with two rows of rivets, the trouble was not completely overcome.

Then a furnace was designed with a welded combustion dome. This construction has eliminated all complaints based on leakage of gas and dust.

Welding is done on the dome seams, the feed and ash chutes, the

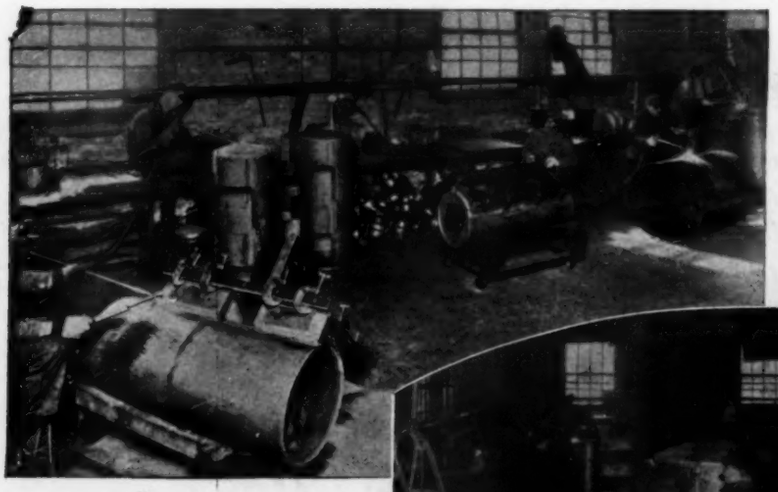


Fig. 4—Jigs are used in the final assembly.

radiator and collar, and ash pit bottom. In addition to the fire-box proper which holds the grates, there is an air chamber in which is a radiator. This receives the cold air from the outside and distributes the warm air to the outlets within the residence. In Fig. 1 the welder is shown engaged in welding the top seam of a large radiator. This radiator is attached to the body of the furnaces and is contained in the outer sheet metal framework. In Fig. 2 a welder is shown working on the top seam of one of the smaller furnaces. The welder shown at the bench in the background is making a joint on the corner of a coal chute. At the extreme left are stacks of coal chutes, already welded, waiting for assembly with the furnace bodies.

Fig. 3 shows the assembly of the coal chute and the ash chute to the furnace front. Next the chutes are attached to the body of the furnace. For this purpose a jig is used which consists of a wooden framework shaped to fit the furnace sides. This is mounted on rollers to facilitate moving. The furnace is placed in this jog and the seams of the ash chutes and coal chutes are welded to the body. Fig. 4 shows the jigs in operation. During welding the parts are held in alignment with C-clamps. The final touches are given and the fronts of the furnaces are prepared for finishing (Fig. 5). Eleven welders are kept busy all the time. Oxygen is supplied from manifolded cylinders, and acetylene is piped through the shop from a low-pressure generator to the various places where the work is being done.

Fig. 5—Putting on the finishing touches.

Experience has proved that seamless, welded steel construction is the most durable that can be used, and that the only furnace which is permanently gas-tight is one made from welded steel, without any cast iron joints at all. Representatives of this manufacturer claim that ox-welded furnaces give a much cleaner heat, last considerably longer, and consume less fuel than any furnace of equal grate area. Such is the company's belief in welding done under proper conditions that they guarantee the steel parts and joints unconditionally for ten years.

## WELDING FURNACES WARRANTED.

(*Continued from page 62*)

panies over two hundred welded tanks up to 7 ft. in diameter, 45 ft. long, of thickness up to 1¼ in., and carrying pressures up to 300 lbs. All of these tanks were tested to and in addition given a test under air pressure of one and one-half times the working pressure, the seams being tested with soapsuds to be sure that they were perfectly tight. In all of these tanks there was not even one pinhole leak. I think it is fair to ask, what other form of construction would stand three times the working pressure, such tests?

I might also refer to a creosoting tank (and the other ones that are necessary for operation in connection with it), which is 90 ft. long, 90 in. inside diameter, 1 in. thick, operating under a steam pressure of 200 lbs., that has been in daily successful operation for some time, the whole unit being insured by one of the oldest and best companies in the country.

Such instances as these should cause those interested in much less severe requirements to study welding carefully, and see if it will not meet their needs because of the good results obtained from it when properly done, especially where high strength and absolute tightness are necessary or advisable.

I might conclude by referring to an article published in the June, 1928, issue of *Oxy-Acetylene Tips*, on the welding of heating furnaces, which I think will be of some interest. I am mailing a copy of it for your information.

**Illustration Showing Two Welded Furnaces Which Came Through a Serious Fire With Flying Colors. In Fact, After the Fire These Two Furnaces Were the Only Things Left Worth Watching**

# *Welded Construction Withstands Terrific Heat of Fire That Destroyed Building*

## *Furnaces on Display Show Little or No Sign of Having Suffered*

THE accompanying photograph taken shortly after what was known as the American Royal Fire at Kansas City, Missouri, shows two Waterbury Seamless Furnaces, which went through the fire in almost perfect shape.

The two furnaces shown in the picture are what was left of the display of the McEwen Furnace Company, Kansas City, Waterbury dealers, after the fire had cooled off.

The building was filled with various kinds of equipment on display and as the picture shows, was completely gutted, all interior partitions, floors and the roof having been completely consumed by the fire.

The reader's attention is called to the fact that the three policemen on guard duty evidently agree that the Waterbury Furnaces are the only materials worth guarding that were left by the fire.

The complete run of everything else in the building is, indeed, a tribute to welded steel furnace construction.

W. L. McEwen, President of the McEwen Furnace Company of Kansas City, may be seen standing at the extreme right of the picture clad in overcoat.

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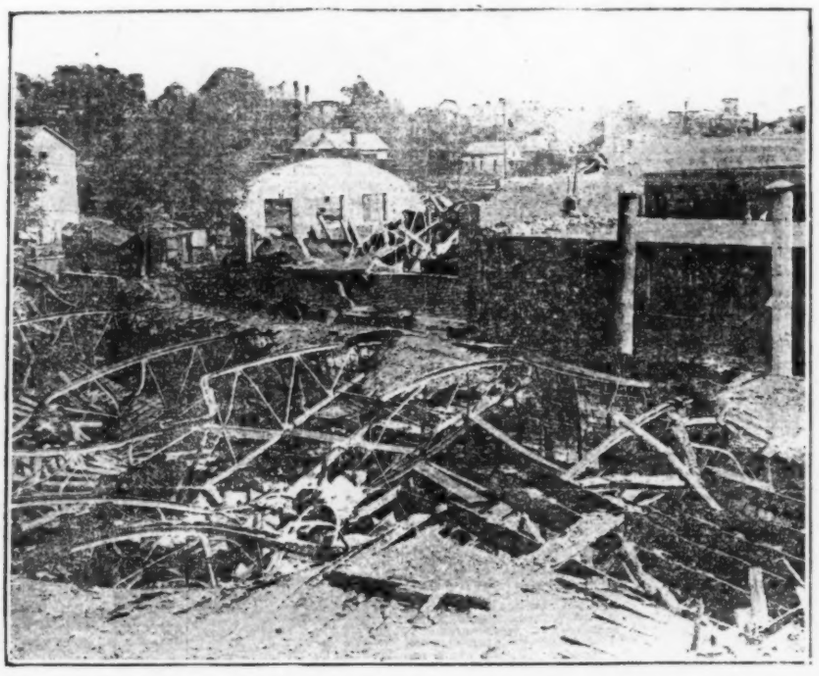
### PATTERN FOR WINDOW

(*Concluded from page* 59)

seam lines drawn were parallel with those in our pattern. In this way the lines were made straight and no double twist was expected of them. Two by four timbers were cut to fit in position and these were nailed on so that several gore sections were nailed on to the timbers and the bottom side was soldered and the solder scraped off from seam and nail head, leaving a perfectly smooth surface. A small crimp was placed in along the seam in order to imbed thickness of the metal.

It was quite a job putting this thing in place and especially arranging for the segmental arch and fitting that in position, after which it had to be soldered on both sides and solder scraped off on the under side so a perfectly sharp edge in miter was made and smooth as well. This work was then crated and shipped to the city where it will be installed and afterwards the painters will put several coats of filler and paint on, as well as decorate it in harmony with the rest of the structure. It is one of the most beautiful pieces of work I have ever seen. Refer to pages 51 and 52 for a similar piece of work at Indiapolis, Indiana.

The John Clements Sheet Metal Works, St. Louis, did the work, and Oscar Lueddie and Joe Krewitz were the men on the job.



Ruins of E. K. Campbell Heating Company.

# *Fire Destroys Building of E. K. Campbell Heating Company, Kansas City*

***Loss of $30,000 Suffered, Covered by Insurance***

FIRE which is believed to have started in the basement of United Film Ad Service, Inc., 2449 Charlotte Street, Kansas City, Missouri, destroyed the building of the E. K. Campbell Heating Company, 2441 Charlotte Street, Saturday, August 4. The damage suffered by the heating company was estimated by Kansas City Fire Chief Donovan to be about $30,000, which was covered by insurance.

According to E. G. Smedley, foreman of the welding department of the E. K. Campbell Heating Company, fire was first seen to be shooting out of two basement windows, the rooms of which contained films or film materials, producing a veritable torch flame playing directly into the building of the Campbell Heating Company next door.

Mr. Campbell, who manufactures special large heavy steel furnaces and unit heaters for steam, will erect a canvas structure immediately, and a steel construction company will erect a building inside of the tent so as not to hinder the regular work of the company any more than is necessary.

Mr. Campbell is Chairman of the Garage Heating Committee of the National Warm Air Heating Association and is well known throughout the warm air heating industry because of his vigorous work in connection with the garage heating code which is now under consideration.

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**Yocum, New Executive of Oil Burner Organizations**

Trell W. Yocum, one of the executives of the American Petroleum Institute, and well known in both the oil and the publishing fields, has been elected Managing Director of the Oil Heating Institute and the American Oil Burner Association, taking office October 1. The announcement was made today by Leod D. Becker, the present Managing Director, who has been at the head of the two related organizations since their establishment six years ago, and who, for some time past, has wished to retire from the office so that he may devote all his time to his publishing business.

"In Mr. Yocum, the directors have chosen a man ideally fitted for the increasing responsibilities of the position. He is a seasoned association executive. He will bring to the oil burner industry a thorough familiarity with the oil business, and his wide acquaintance with the leaders of the oil industry will be of material benefit to both the oil and oil burner industries."

Mr. Becker continues as a member of the Boards of the Oil Heating Institute and the American Oil Burner Association.

Mr. Yocum was born in Mechanicsburg, Ohio, in 1893, and graduated from Ohio State University in 1914. After leaving college he engaged in newspaper and magazine work in Cleveland. When the United States entered the war, he joined the first Officers' Training Camp at Fort Benjamin Harrison, but shortly after was incapacitated for military service by temporary physical disability following a major operation. From 1917 to 1919 he was a member of the staff of Herbert Hoover. From 1919 to 1924 he was with the Crowell Publishing Company, first as managing editor of Farm and Fireside, and later as managing editor of Collier's. In 1924 he became secretary, and later director, of the Committee on Public Relations of the American Petroleum Institute, a position he holds at the present time. He resides at Indian Head Point, Riverside, Conn.

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**Great Western Stove Co. Plans Erection of New Building**

According to a recent announcement, work will be started within the next few weeks on the construction of a modern three-story building at 310 Hennepin avenue,

Minneapolis, Minn., by the Great Western Stove & Repair Co., of that city.

This move marks the largest expansion of the company in the 35 years of its existence. The new structure will cost approximately $60,000 and will replace a building destroyed by fire in 1927. The entire building will be occupied by the company and will have a cut stone front with a large display room on the first floor.


**Cast Iron Smoke Pipe**

From Redlich and Son, 118 North State street, Jerseyville, Illinois, and Walter H. Ziegler, 207 North Hackley, Muncie, Indiana.

Kindly inform us who makes cast iron smoke pipe.

Ans.—Waterloo Register Company, Waterloo, Iowa.

**Incinerators**

From W. J. Vierck and Son, East State at North First street, Rockford, Illinois.

Please tell us who makes incinerators.

Ans. — Mid-West Incinerator Corporation, 154 East Erie street, and Kerner Incinerator Company, 612 North Michingan avenue; both of Chicago, Illinois.

**Ventilating Louvres, Screens, Special Hardware, Etc.**

From Fred Havig, Box 56, Osage, Iowa.

I am in the market for ventilating louvres, screens, and special hardware, etc.

Ans.—You can purchase the above from American Foundry and Furnace Company, Bloomington, Illinois.

**Furnace Overcoat**

From Excel Sheet Metal Work, 3806 Montrose avenue, Chicago.

Can you tell us who makes an asbestos covering for furnaces?

Ans.—Minwool Insulating Company, Kalamazoo, Michigan.

# *10-Acre Factory Site Purchased in Columbus by Midland Furnace Company*

### *Building Construction to Begin at Once— Sales Force of New Company Assembled*

THE Midland Furnace Co., 735 Huntington Bank Building, Columbus, Ohio, R. C. Walker, President and General Manager, has purchased a factory site of 10 acres with a frontage of 625 feet on the north side of Delaware road, extending 800 feet to the Hocking Valley Railroad. This tract is north of King avenue, and is part of the old Lewis Sells farm. Mr. Walker stated that work will start at once on installation of 1000 feet of railroad side-track and grading of the site for buildings.

The contract for grading and construction work for side-track was awarded to M. F. Haley, 1225 Summit street.

The building program calls for construction of two brick, steel and steel-sash buildings, one 90 feet by 260 feet, and one 90 feet by 300 feet, the latter to provide modern office, sales and display room space in front. These buildings are to be equipped with heavy steel working machinery to allow early and continued manufacture.

Within a year Mr. Walker plans to continue the program which calls for three more buildings, one storage warehouse 60 feet by 260 feet, and two foundry units, each 79 feet by 400 feet, with a common cupola between them. It is expected that contract for building construction will be let within two weeks.

The buildings are designed along modern lines, setting back 100 feet from Delaware road.

Twenty-five salesmen will travel out of Columbus selling the Columbus made furnaces. The executive and sales organization has been obtained and will be assembled to take charge of the company's activities in Columbus as soon as the factory and office is completed, about October 15.

**Should Oil for Heating Be Kept on Hand in Summer?**

Many new users of oil heaters are wondering which is better, to keep their oil tanks filled in the summer time or to let them stand empty. Like most problems, there are advantages and disadvantages to both methods.

When an oil tank is allowed to stand empty all during the summer months, there is always the possibility that foreign matter, as well as water and condensation will find their way into the tank. There is not much danger of corrosion as the oil forms a protective coating over the metal which will act as a preservative for a long time.

Moreover, with an empty tank, all the other parts of the oil heating apparatus may be standing ready to function, but no heat can be had in event of an unexpected cold snap or a period of cold rainy weather. One of the chief advantages of oil heating lies in its ability to meet unexpected demands regardless of when they may occur, and an empty oil tank on such occasions is about as popular as a dry gasoline tank in an automobile five miles from a gas station.

When the oil tank is filled up in the spring and left to stand all summer with only a few light demands upon it for unseasonable days, there is the possibility that the oil will have a tendency to settle out. Added to this is the fact that the user will have an investment in oil tied up for six months before he really has need of it.

Yet the matter of the investment should not stand in the way to any serious degree, because the house owner has become pretty well accustomed to buying during the summer all his coal for the following winter, and he usually pays the bill, too, before he actually burns a single shovelful.

When the cost consideration is important or where a poor grade of oil is being used, it is better to let the tank stand dry until early fall, at which time it may be filled and made ready for the first cold weather.

# *Which Is Better, Furnace Made of Pure Pig Iron or One With Some "Scrap Content?"*

### *Question Asked and Answered by L. W. Millis at Missouri Sheet Metal Contractors Convention*

AT a meeting of the Missouri State Sheet Metal Contractors Association held in Kansas City, Missouri, the following question was found in the "Question Box": "Which will stand up best, a cast iron furnace in which some 'scrap' is used, or one made altogether of 'pig' iron?" The question was referred to L. W. Millis of the Warm Air Study Club of the Security Stove & Manufacturing Company. Here is his answer.

First I want you to think of the elements constituting cast iron. Pure iron would be a laboratory product extremely soft and with no commercial value. Cast iron as you know it contains about 92 or 93 per cent of iron. The remainder is carbon (in two forms), silicon, manganese, sulphur and phosphorus. These elements are used in varying quantities to make up the composition you call cast iron. These elements react upon each other as well as upon the iron. Of course, the reactions change as the quantities used are changed. By this means a wide range of characteristics can be imparted to the iron. All cast irons are good, but are not good for the same thing.

Some castings might be required to stand great shocks, others compression, still others side-wise pressures, etc. A warm air furnace needs none of those qualities in a high degree. It is required to stand the action of expansion and contraction caused by heating and cooling. The arrangement of the carbon content of the mixture is important in this connection. A portion of the carbon is combined within the grains of iron. Another portion of the carbon lies between the grains of the iron. It is in the form of graphite and acts as a lubricant between the grains as metal expands and contracts when in use with the heat and cold.

Varying quantities of the five elements change all of the relation to each other. You would not be justified in taking time to hear about them. Any competent foundry man knows, within fairly close range, the amount of each his product requires and buys his irons (pig and so-called scrap or perhaps pig only) with a certain range of each specified in the pig iron. I might mention that the range in various pigs is so great that it is beyond tabulation. Let us suppose three piles of iron in a foundry yard, two are cars of pig iron with ingredients in percentages as follows, and one is a car of worn out or broken castings (not burned iron, or tin cans or barrel hoops):

| | Carbon | Silicon | Sulphur | Manganese |
|---|---|---|---|---|
| Pig pile No. 1 | 3.40 | 3.25 | .02 | 1.00 |
| Pig pile No. 2 | 3.13 | 1.80 | .05 | .60 |
| Scrap pile No. 3 | 3.20 | 1.75 | .09 | .50 |

There are various reactions inside of the cupola. Therefore, let us suppose that the foundry man wants mixture he charges *into* the cupola to equal carbon, 3.25; silicon, 2.10; sulphur, .03; manganese, .60. He can then calculate how much of expensive pile No. 1 he must mix with varying quantities of pile No. 2 in order to arrive at his requirements. Or he can calculate how much of low cost pile No. 3 he can use with pile No. 1. Or he can calculate the quantities he can take out of each if he uses all three of the piles.

In practice he will also return to the cupola the "gates" or parts that carried the fluid iron to the castings he made on previous days. These are "scrap" as truly as the scrap he buys. The ingredients of his own scrap must also be calculated in his mix. Here is a gold watch. When I bought it I did not ask the jeweler if it was made of virgin gold, but I required that he "show me" by test what it contains now. In similar manner the foundryman can make his finished product out of part scrap (remelt would be a better term) and part pig but the pig must then be richer in certain elements than would be required if he used no scrap. In some localities scrap might be scarce and pig easy to get. In other places, scrap, nearly the same in contents as pig, might be available at low cost and the freight on pig iron might be high. *If he maintains the standards of his mixture the resulting casting will be the same either way.* Although the cost may vary, the resulting casting will be identical it will be found.

## SPOT NEWS

The Case & Morse Heating & Ventilating Equipment Co., Security Building, Portland, Ore., has engaged in business under the management of R. H. Case and H. R. Hobagoom.

The Fuller Furnace Fitting Co., furnaces and sheet metal work, has been incorporated in Seattle, Wash., with a capital of $5,000, by William S. Fuller and Ervin A. Rotta.

The Berger Manufacturing Co., manufacturer of sheet metal products in Canton, O., and with western office at 1120 Mission street, San Francisco, Cal., have appointed Neal, Stratford & Kerr their San Francisco agents.

The Houseman Sheet Metal Works, 1549 Jordan street, Shreveport, La., has the roofing and sheet metal contract for high school at Haynesville, La.

# *Steel Record Reflects Increased Consumption*

## *August Tonnage in First Week Continues at Record Rate—Pig Iron Sales More Active*

MORE steel was produced last month than in any July on record, and if the gait of the first week of August is maintained a new August record is in the making. Since stocks of producers and consumers alike are most meager, consumption is correspondingly high.

### Finished Steel Demand Is Broader

Undoubtedly, this is the best summer in the history of the metal-working industry, of which increased demand for many lines of finished steel in the past week affords substantiation, but the changing trends in consumption frequently tinge the markets with a spottiness belaying this pace.

Most steel lines tying in with the automotive industry, from road building machinery to the most fashionable motor car accessory, continue pressed to make deliveries. On the other hand, freight car and locomotive shops and many metal-working plants producing for direct or retail store selling have rarely operated so poorly.

### Turns Are Reduced by Hot Weather

Hot weather has retarded sheet production but not demand, and deliveries have backed up. Fourth quarter inquiry is appearing at Pittsburgh but makers, sensing a stronger market than the current 2.00c for blue annealed, 2.65c for black, and 3.50c for galvanized and 4.00c for autobody, avoid committing themselves this far in advance.

### July and Seven Months Set Ingot Record

July's steel ingot total of 3,811,573 tons and its daily rate of 152,463 tons have never been exceeded since monthly production figures were first compiled in 1917, and therefore seem a record. The seven-month total, at 28,604,456 tons, easily outdistances the 27,011,522 tons of the like period of 1927 and the previous record of 27,965,382 tons of 1926. The July daily rate of 152,463 tons compares with only 128,165 tons last July and the record of 143,520 tons in July, 1918.

Steel corporation subsidiaries are operating this week at 76 per cent, 1 point higher than last week and 5 higher than a year ago. Independent production averages about 70 per cent. Four more open hearth furnaces are active in the Mahoning valley, putting 42 out of 53 independent units in operation, the most this year. Pittsburgh averages 75 per cent, a rate Chicago finds difficult to maintain. Bethlehem Steel Company's schedule for August is 80 per cent, an advance of a point.

### Pig Iron

Pittsburgh noted unmistakable signs of increased consumption of pig iron. July shipments in general exceeded June, and August so far promises to exceed July. This trend makes certain sellers less aggressive in seeking business. Others, however, are openly soliciting orders, and are taking small lots of No. 2 foundry iron at $16.50 base, valley. Single carloads occasionally bring $16.75. Basic iron is entirely inactive; the price usually quoted is $16, valley. One buyer closed on 500 tons of bessemer at $17, valley.

At Chicago conservative and quiet buying of pig iron is developing for fourth quarter, while spot sales are showing more activity. The total volume during the week was slightly above the preceding week. Foundry pig iron stocks are low, and early shipments are being asked. Ordinary business is at the furnace price of $24, or $27.04 delivered, Chicago. Foundry and malleable grades are holding at $17.50, base, Chicago furnace.

### Copper

Copper has been active in a quiet way, with some buying every day by domestic users for September shipment. On account of the demonstrated stability of the market, users are shopping around little, and for that reason the same amount of the business is not attracting as much attention as sometimes.

### Tin

The market is puzzling because of the manner in which it has held in the face of weak statistics for July. World visible supply increased 1,791 tons last month on account of large shipments from the Straits and light deliveries in this country. The visible supply at 18,022 tons was the largest in more than 2 years. This situation had been anticipated early last month and that is one reason for little action in the prices since the figures came out. On the other hand, light deliveries in this country last month, at only 5,545 tons, compared with an average of more than 6,000 tons a month, are offset by expectation of large deliveries this month.

### Zinc

The prompt price of prime western has advanced from 6.20c, East St. Louis, to 6.25c. The latter figure has prevailed for August shipment for some time and as the turn of the month came to hand there was a question whether the prompt figure would go to the August figure or vice versa.

### Lead

There is a steady but light flow of business every day for early shipment. Prices are firm but unchanged.

### Old Metals

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, $15.75 to $16.25; old iron axles, $24.00 to $24.50; steel springs, $15.50 to $16.00; No. 1 wrought iron, $11.00 to $11.50; No. 1 cast, $12.75 to $13.25; all per net tons. Prices on non-ferrous metals are quoted as follows, per pound: Light copper, 10½ cents; zinc, 3¼ cents; cast aluminum, 11¾ cents.

# Chicago Warehouse Metal and Furnace Supply Prices

**AMERICAN ARTISAN is the only publication containing Western Metal, Furnace Supply and Hardware prices corrected weekly**

## METALS

### PIG IRON

Chicago Fdy., No. 2 ..... $17.50
Southern Fdy. No. 2 ..... 21 51
Lake Superior Charcoal .... 27 04
Malleable ..... 17.50

### FIRST QUALITY BRIGHT TIN PLATES

| | | |
|---|---|---|
| IC | 20x28 112 sheets | $25 10 |
| IX | 20x28 | 29 60 |
| IXX | 20x28 56 sheets | 16 20 |
| IXXX | 20x28 | 17 55 |
| IXXXX | 20x28 | 18 95 |

### TERNE PLATES

| | | Per Box |
|---|---|---|
| IC | 20x28, 40-lb. 112 sheets | $25 00 |
| IX | 20x28, 40-lb. 112 sheets | 27 75 |
| IC | 20x28, 35-lb. 112 sheets | 21 15 |
| IX | 20x28, 35-lb. 112 sheets | 23 80 |
| IC | 20x28, 20-lb. 112 sheets | 19 55 |
| IV | 20x28, 20-lb. 112 sheets | 22 05 |
| IC | 20x28, 15-lb. 112 sheets | 18 05 |

### "ARMCO" INGOT IRON PLATES

No. 8 ga. up to and including ¼ in.—100 lbs. ..... $4 55

### COKE PLATES

| | | |
|---|---|---|
| Cokes, | 80 lbs., base, 20x28 | $13 60 |
| Cokes, | 90 lbs., base, 20x28 | 13 80 |
| Cokes, | 100 lbs., base, 20x28 | 14 00 |
| Cokes, | 107 lbs., base, IC 20x28 | 14 30 |
| Cokes, | 135 lbs., base, IX 20x28 | 16 40 |
| Cokes, | 155 lbs., base, 56 sheets | 9 20 |
| Cokes, | 175 lbs., base, 56 sheets | 10 05 |
| Cokes, | 195 lbs., base, 56 sheets | 10 90 |

### BLUE ANNEALED SHEETS

Base 10 ga....per 100 lbs. $3 35
"Armco" 10 ga..per 100 lbs. 4 00

### ONE PASS COLD ROLLED BLACK

| | | |
|---|---|---|
| No. 18-20 | per 100 lbs. | $3 75 |
| No. 22 | per 100 lbs. | 3 90 |
| No. 24 | per 100 lbs. | 3 80 |
| No. 26 | per 100 lbs. | 4 00 |
| No. 27 | per 100 lbs. | 4 10 |
| No. 28 | per 100 lbs. | 4 20 |
| No. 29 | per 100 lbs. | 4 35 |
| No. 30 | per 100 lbs. | 4 45 |

### "ARMCO" GALVANIZED

"Armco" 24....per 100 lbs. $6 00

### GALVANIZED

| | | |
|---|---|---|
| No. 16 | per 100 lbs. | $4 30 |
| No. 18 | per 100 lbs. | 4 45 |
| No. 20 | per 100 lbs. | 4 60 |
| No. 22 | per 100 lbs. | 4 65 |
| No. 24 | per 100 lbs. | 4 65 |
| No. 26 | per 100 lbs. | 5 05 |
| No. 27 | per 100 lbs. | 5 15 |
| No. 28 | per 100 lbs. | 5 30 |
| No. 30 | per 100 lbs. | 5 70 |

### BAR SOLDER

**Warranted**
50-50 .....per 100 lbs. $31 00

**Commercial**
45-55 .....per 100 lbs. 27 50
Plumbers ...per 100 lbs. 24 50

### ZINC

In Slabs ..... $ 8 50

### SHEET ZINC

Cask Lots (600 lbs.)..... $11 25
Sheet Lots ..... 12 25

### BRASS

Sheets, Chicago Base..... 19¼c
Mill base ..... 18½c
Tubing, brazed base..... 27¼c
Wire, base ..... 18½c
Rods, base ..... 16¼c

### COPPER

Sheets, Chicago base..... 24½c
Mill base ..... 23½c
Tubing, seamless base..... 26¼c
Wire, No. 9, B & S Ga.... 19⅝c
Wire, No. 10, B & S Ga.... 19½c
Wire, No. 11, B & S Ga.... 20¼c
Wire No. 3, B & S Ga. and heavier ..... [illegible]

### LEAD

American Pig ..... $7 20
Bar ..... 8 20

### TIN

Pig Tin .....per 100 lbs. $55 00
Bar Tin .....per 100 lbs. 56 00

## HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

### ASBESTOS

Paper up to 1/16.....6c per lb.
Roll board .....6¼c per lb.
Mill board 2/32 to ⅛...6c per lb.
Corrugated Paper (250 sq. ft. to roll)....$6 00 per roll

### BRUSHES

**Furnace Pipe Cleaning**
Bristle, with handle, each $0 75

**Flue Cleaning**
Steel only, each..... 1 25

### BURRS

Copper Burrs only .....40-2½%

### CEMENT, FURNACE

American Seal, .5-lb. cans, net $ 45
American Seal, 10-lb. cans, net 85
American Seal, 25-lb. cans, net 2 25
Pecora .....per 100 lbs. 7 50

### CHIMNEY TOPS

**Adams' Revolving**

| | Wt. Doz. | Price Doz. |
|---|---|---|
| 4 in. | 21 lbs. | $11 00 |
| 6 in. | 24 lbs. | 11 50 |
| 7 in. | 30 lbs. | 13 50 |
| 8 in. | 33 lbs. | 15 00 |
| 9 in. | 51 lbs. | 16 50 |
| 10 in. | 56 lbs. | 18 00 |
| 12 in. | 66 lbs. | 22 00 |
| 14 in. | 110 lbs. | 36 00 |

### CLINKER TONGS

Each ..... $1 50

### CLIPS

**Damper**
No-Rivet Steel, with tail pieces, per gross.....$9 50
Rivet Steel, with tail pieces, per gross ..... 7 50
Tail pieces, per gross..... 2 40

### COPPERS—Soldering

**Pointed Roofing**

3 lb. and heavier.....per lb. 40c
2½ lb. .....per lb. 45c
2 lb. .....per lb. 48c
1½ lb. .....per lb. 55c
1 lb. .....per lb. 60c

### CORNICE BRAKES

**Chicago Steel Bending**
Nos. 1 to 6B.....Net

### CUT-OFFS

Gal., plain, round or cor. rd.
26 gauge .....30%
28 gauge .....35%

### DAMPERS

**"Yankee" Hot Air**
7 inch, each 20c, doz.....$1 60
8 inch, each 25c, doz..... 2 20
9 inch, each 30c, doz..... 2 60
10 inch, each 32c, doz..... 2 80

**Smoke Pipe**
7 inch, doz.....$1 60
8 inch, doz..... 2 20
9 inch, doz..... 2 60
10 inch, doz..... 3 75
12 inch, doz..... 4 50

### ADAMS No. 1 CHECK

**Check and Collar Complete**
8 inch, each..... 2 00
9 inch, each..... 2 25

**End Check Only**
8 inch, each..... 1 60
9 inch, each..... 1 85

**Collar Only**
8 inch, each..... 50
9 inch, each..... 65

### No. 2 CHECK

8 inch, each..... 1 00
9 inch, each..... 1 00

**10% Disc. on Adams No. 1 and No. 2 Check**

**Diamond Smoke Pipe**
7 inch, doz.....$ 2 00
8 inch, doz..... 2 20
9 inch, doz..... 4 50
10 inch, doz..... 4 80

**Adams' Sheet Metal**
7 inch, doz.....$ 1 60
8 inch, doz..... 2 20
9 inch, doz..... 2 60
10 inch, doz..... 2 80
12 inch, doz..... 3 50
14 inch, doz..... 5 00

### EAVES TROUGH

Galv. Crimpedge, crated 75 & 5%
Zinc, "Barnes" .....60%

### ELBOWS

**Conductor Pipe**
Galv. plain or corrugated, round flat Crimp.
28 Gauge .....60%
26 Gauge .....45%
24 Gauge .....15%

**Galv. & Terne Steel**
Plain Rd. and Rd. Corr.:
28 Ga. .....60%
26 Ga. .....45%
24 Ga. .....15%

**Square Corrugated**
No. 28 Gauge .....50%
26 Gauge .....35%

**Portico Elbows**
Standard Gauge Conductor Pipe, plain or corrugated.
Not nested .....70 & 5%
Nested Solid .....70 & 5%

**Sq. Corr., A. & B. & Octagon**
28 Ga. .....50%
26 Ga. .....35%

**Portico**
1", 1¼", 1½".....45%

**Copper**
16 oz., all designs.....50%

**Zinc—**
All styles .....60%

### ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue "Milcor" No. 28 Gauge. Doz.

| | |
|---|---|
| 5-inch | $1 05 |
| 6-inch | 1 20 |
| 7-inch | 1 75 |

**Special Corrugated**

| | |
|---|---|
| 6-inch | $1 00 |
| 7-inch | 1 60 |

**Adjustable—Uniform Blue**
"Milcor" No. 28 Gauge. Uniform Blue.

| | |
|---|---|
| 5-inch | $1 65 |
| 6-inch | 1 75 |
| 7-inch | 2 10 |

**WOOD FACES—50% off list.**

### FENCE

726-6-12½% (100 rods)....$28 68
1948-6-14½% (100 rods).... 43 62

### FILES AND RASPS

Heller's (American) .....50-10%
American .....60-10%
Arcade .....50%
Black Diamond .....50%
Eagle .....50%
Great Western ..... .....50%
Kearney & Foot .....50%
McClellan .....50%
Nicholson .....50%
Simonds .....60%

### FIRE POTS

| Geo. W. Diener Mfg. Co. | Ea. |
|---|---|
| No. 02 Gasoline Torch, 1 qt. | $ 5 13 |
| No. 0250, Kerosene, or Gasoline Torch, 1 qt... | 6 50 |
| No. 10 Tinner's Furn. Square tank, 1 gal..... | 11 20 |
| No. 15 Tinner's Furn. Round tank, 1 gal..... | 10 70 |
| No. 21 Gas Soldering Furnace ..... | 8.60 |
| No. 110 Automatic Gas Soldering Furnace .... | 10 50 |

**Quick Meal Stove Co.**
Vesuvius, F. O. B. St. Louis 30%
(Extra Disct. for large quantities.)

### GALVANIZED WARE

Pails (Galv. afte made), 10-qt. .....$2 90
Tubs (Galv. after made).
No. 1 ..... 5 75
No. 2 ..... 6 50

### GLASS

Single Strength, A, 52-in. brackets .....88%
Single Strength, B, 34 to 40-in. brackets .....89-5%
Single Strength, A, all other brackets .....88%
Double Strength, A, all sizes 88%

### HANGERS

**Conductor Pipe**
Milcor Perfection Wire.....25%
Milcor Triplex Wire.....10%

**Eaves Trough**
Milcor Steel (galv. after forming) List ....plus 12½%
Milcor Selflock E. T. Wire, List .....plus 50%

### HOOKS

**Conductor**
"Direct Drive" Wrought Iron for wood or brick..15%

### HUMIDIFIER

**"Front-Rank," Automatic**
In single lots.....50%
In lots of 10 or more....50-5%
In lots of 25 or more...50-10%
Vapor pans, etc., each.....50%

### LIFTERS

**Stove Cover**
Coppered .....per gro. $6 00
Alaska .....per gro. 4 75

### MALLETS

**Tinners**
Hickory .....per doz. $2 25

### MITRES

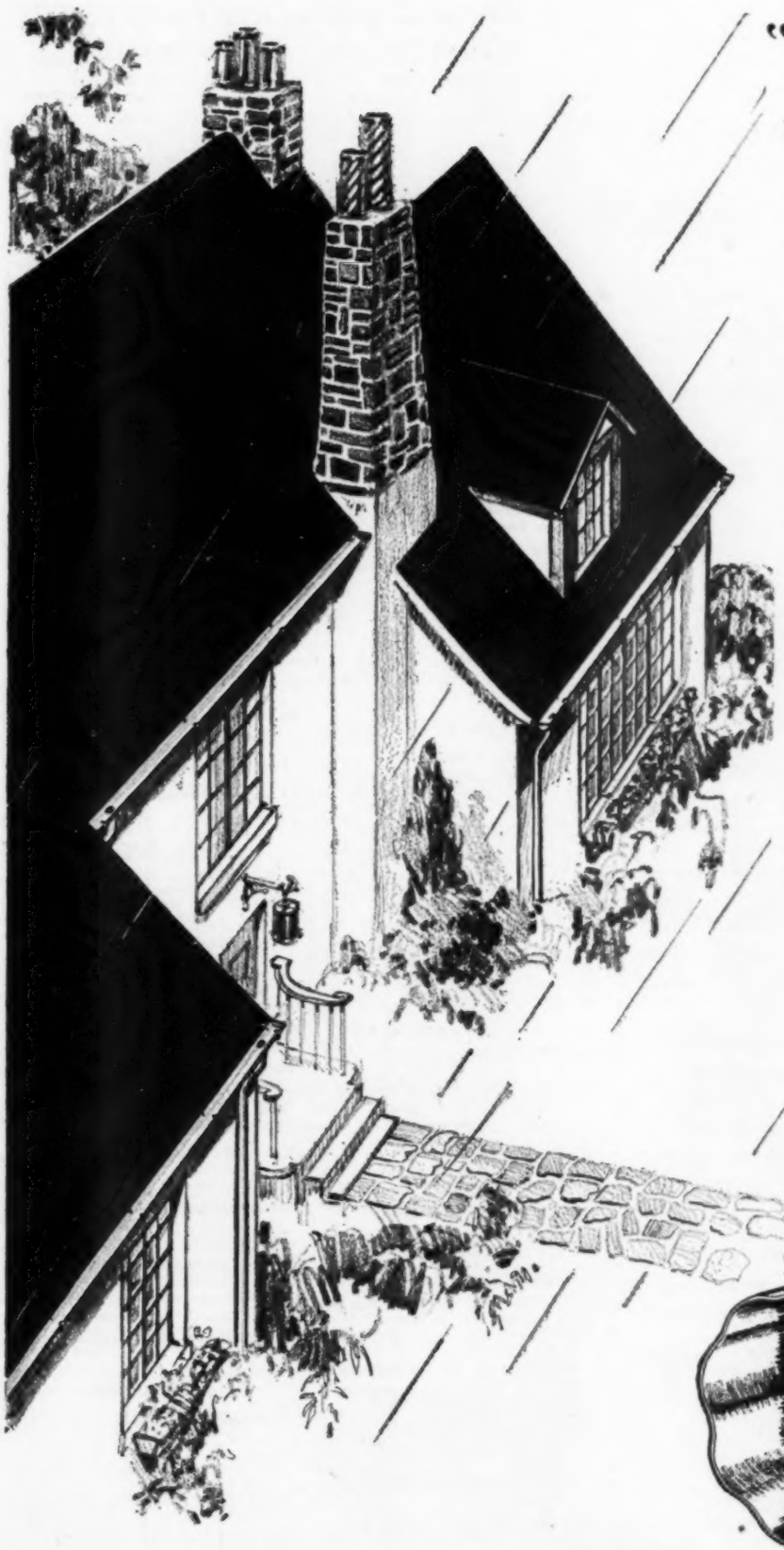
Galvanized steel mitres,
28 Ga. .....70
26 Ga. .....60-10

### NAILS

Cut Steel .....$4 85
Cut Iron ..... 4 85

**Wire**
Common .....$3 10
Cement Coated ..... 3 10

(Continued on Page 72)



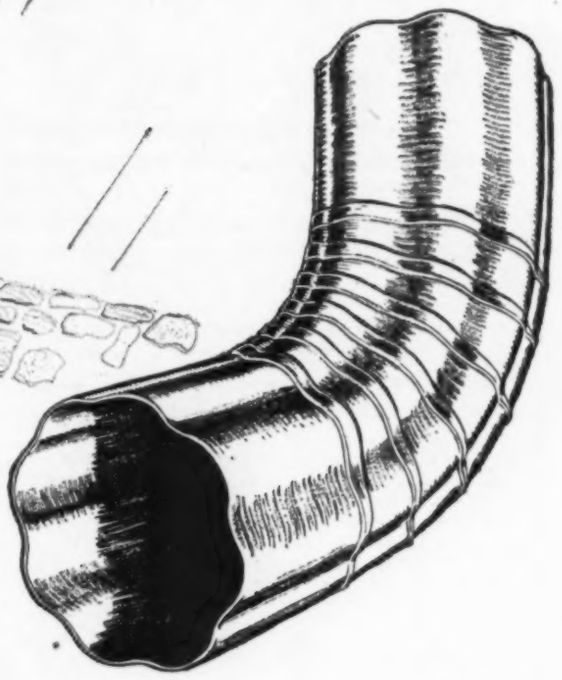
# "SEND *a big man* to do a big Job"

The big job of roof-drainage falls to the lot of the Elbows. It's in the Elbows that bunched leaves gather sewer gas and moisture. It's in the Elbows that the water hits and scours the hardest.

Who's the big man for this job? The Lupton Elbow of course! Lupton Elbows stand up best because they're made of heavier metal, are more heavily galvanized, and are correctly shaped for fast discharge.

Lupton Elbows are made right—made to last—made to take the wear. And every one is uniform.

DAVID LUPTON'S SONS COMPANY
Allegheny Ave. and Tulip St., Philadelphia



**Lupton QUALITY Elbows**

# ADVERTISERS' INDEX

**The dash (—) indicates that the advertisement runs on a regular schedule but does not appear in this issue.**



## *Markets—Continued from Page 70*

**PASTE**

Asbestos Dry Paste:

| | |
|---|---|
| 200-lb. Barrel | $16 00 |
| 100-lb. barrel | 8 75 |
| 25-lb. pail | 3 50 |
| 10-lb. bag | 1 10 |
| 5-lb. bag | 60 |
| 2½-lb. cartons | 35 |

**POKERS, FURNACE**

Each ..... $0 75

**POKERS, STOVE**

Nickel Plated, coil handles, per doz. ..... 1 10
W'r't Steel, str't or bent, per doz. ..... $0 75

**PIPE**

Conductor
Cor. Rd., Plain Rd., or Sq.

Galvanized
Crated and nested (all gauges) ..... 75-2½%
Crated and not nested (all gauges) ..... 70-15%

Furnace Pipe
Double Wall Pipe and Fittings ..... 50%
Single Wall Pipe, Round Galvanized Pipe ..... 50%
Galvanized and Tin Fittings ..... 50%

Lead
Per 100 lbs. ..... $12 50

Stove Pipe
"Milcor" "Titelock" Uniform Blue Stove

| | |
|---|---|
| 28 gauge, 5 inch U. C. nested | 10 50 |
| 28 gauge, 6 inch U. C. nested | 11 00 |
| 28 gauge, 7 inch U. C. nested | 13 00 |
| 30 gauge, 5 inch U. C. nested | 9 00 |
| 30 gauge, 6 inch U. C. nested | 10 00 |
| 30 gauge, 7 inch U. C. nested | 12 00 |

T-Joint Made up
6-inch, 28 ga. ... per doz. $ 4 00

All Zinc
No. 11, all styles ..... 60%

**PULLEYS**

| | |
|---|---|
| Furnace Tackle ... per doz. | $0 85 |
| ... per gro. | 8 50 |
| Furnace Screw (enameled) ... per doz. | 75 |

**PUTTY**

Commercial Putty, 100-lb. Kits ..... $3 50

**QUADRANTS**

Malleable Iron Damper ..... 10%

**REDUCERS—Oval Stove Pipe**

| | Per Doz. |
|---|---|
| 7—6, 28-gauge, 1 doz. in carton ..... | $2 00 |

**REGISTERS AND BORDERS**

**Baseboard, Floor and Wall.**

Cast Iron ..... 20%
Steel and Semi-Steel ..... 40%
Baseboard, 1 piece ..... 40-20%
Baseboard, 2 piece ..... 40%
Wall ..... 40%
Adjustable Ceiling Ventilators ..... 40%

**Register Faces—Cast and Steel**

Japanned, Bronzed and Plated, 4x6 to 14x14 ..... 40%
Large Register Faces—Cast, 14x14 to 25x42 ..... 60%
Large Register Faces—Steel, 14x14 to 25x42 ..... 55%

**Ventilating Register**

| | |
|---|---|
| Per gross | 9 00 |
| Small, per pair | 20 |
| Large, per pair | 50 |

**RIDGE ROLL**

Galv., Plain Ridge Roll, b'did ..... 75-10-5%
Galv., Plain Ridge Roll crated ..... 75-10%
Globe Finials for Ridge Roll .. 50%

**SCREWS**

Sheet Metal

| | |
|---|---|
| 7, ½x¼, per gross | $0 55 |
| No. 10, ¾x3/16, per gross | 65 |
| No. 14, ⅞x¼, per gross | 85 |

**SHEARS, TINNERS' & MACHINISTS'**

Viking ..... $22 00

Lennox Throatless

| | |
|---|---|
| No. 18 | 35% |
| Shear blades | 10% |

(f. o. b. Marshalltown, Iowa)

**SHIELDS, ADJUSTABLE RADIATOR**

No. 1 "Gem" 11" to 17" ..... 30%
No. 2 "Gem" 14" to 24" ..... 30%
No. 8 "Gem" 25" to 65" ..... 30%

**SHOES**

Galv. 28 Gauge, Plain or corrugated round flat crimp ... 60%
26 gauge round flat crimp .... 45%
24 gauge round flat crimp .... 15%

**SNIPS, TINNERS**

Clover Leaf ..... 40 & 10%
National ..... 40 & 10%
Star ..... 50%
Milcor ..... Net

**SQUARES**

Steel and Iron ..... Net
(Add for bluing $3 per doz. net)
Mitre ..... Net
Try ..... Net
Try and Bevel ..... Net
Try and Mitre ..... Net
Fox's ..... per doz. $6 00
Winterbottom's ..... 10%

**STOPPERS, FLUE**

| | |
|---|---|
| Common ..... per doz. | $1 10 |
| Gem, No. 1 ..... per doz. | 1 10 |
| Gem, flat, No. 3 .... per doz. | 1 00 |

**VENTILATORS**

Standard ..... 30 to 40%

**WIRE**

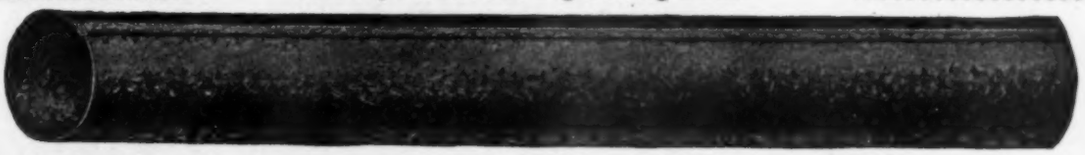
| | |
|---|---|
| Plain annealed wire, No. 6 per 100 lbs. ..... | $3 05 |
| Galvanized barb wire, per 100 lbs. ..... | 3 90 |
| Wire Cloth—black painted, 12-mesh, per 100 sq. ft. .... | 1 85 |
| Cattle Wire—galvanized catch weight spool, per 100 lbs. . | 3 80 |
| Galvanized Hog Wire, 80 rod spool, per spool ..... | 3 15 |
| Galvanized Plain Wire, No. 9, per 100 lbs. ..... | 3 85 |
| Stove Pipe, per stone ..... | 1 10 |

*No Cross Seams. One Longitudinal Seam. Smooth on Inside.*

## Galvanized Lock Seam Pipe

*The Pipe With the Big Strong Seam*

*Made to Fit Flanges, or With Large and Small Ends. For Slip Joint Connection.*



Three inch Diameter and Larger. 24 Gauge and Heavier. Up to 10 feet Long.

*Used for Blow Pipe, Exhaust, Ventilation, Drainage, Surface Irrigation, etc.*

WRITEFOR CATALOGUE

**Welded Steel Pipes, Rolled Angle Flanges, Spiral Lock Seam Pipe, Forged Steel Flanges, Fittings for every type of Sheet Steel Pipe. If it is made of Sheet Metal, send us detail or blue print for price.**

CHICAGO METAL MFG. CO. - 3718 South Rockwell Street, Chicago, Illinois

*The NEW IMPROVED* **"STANDARD"**

***Rotable Ventilator***

***Now made of Armco Iron***

*Patents pending*

This favorite cone-shaped ventilator is now improved in several important points.

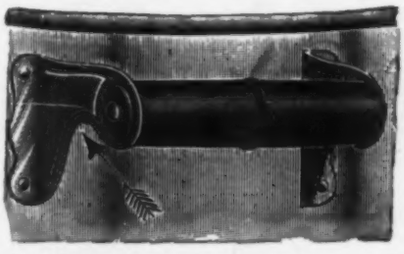
The weight of the ventilator body is now carried on a concave thrust bearing nested in the apex of the conical body. This bearing turns upon the pivot point of the stationary center spindle.

The bronze Guide Bushings are now made of non-corrosive bronze which minimizes friction and any tendency to screech when body is rotating.

***There are other new features. Write today for new catalog and price list.***

STANDARD VENTILATOR CO., Lewisburg, Pa.

## KEYSTONE BOILER HANDLES



WE make a complete line of Boiler Handles.

Also handles for Boiler Covers.

Cut shows No. 40 style.

Let us send you samples.

***SOLD BY LEADING JOBBERS***

**BERGER BROS. CO.**

229 to 237 ARCH STREET PHILADELPHIA, PA.

Warerooms and Factory: 100 to 114 Bread Street

Manufacturers of "Quaker City" line of Miters, Ends, Caps and Outlets 4

## PERFORATED METALS

All Sizes and Shapes of Holes

In Steel, Zinc, Brass, Copper, Tinplate, etc.

For All Screening, Ventilating and Draining

EVERYTHING IN PERFORATED METAL

THE HARRINGTON & KING PERFORATING CO

5649 FILLMORE ST.-CHICAGO, ILL., U. S. A.

NEW YORK OFFICE, 114 LIBERTY ST.

## ARMCO

INGOT IRON

RESISTS RUST

**It's ductile—forms easily.**
**Cuts cost—in shop and on the job.**
**Insures contented customers.**
**Is easier to sell—prospects know it.**

**ARMCO Distributors Ass'n of America**
**Executive Offices, Middletown, Ohio**

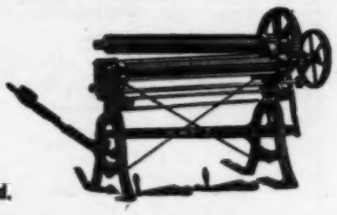
## 50-INCH FORMING ROLL

This Forming Roll is built in all standard sizes, with our Patented Opening Device by means of which it is opened and closed in a few seconds.

*We build a complete line of Shears and punches, all sizes, for hand or belt power.*

**Write for Catalog "R"**

**BERTSCH & CO., Cambridge City, Ind.**



## The W. J. BURTON CO.

Detroit, Michigan

Forty-Four Years
Serving the
Sheet Metal Contractor

with

*SHEET METAL PRODUCTS FOR BUILDINGS*

WHEN you write to advertisers please mention that you saw it in

AMERICAN ARTISAN

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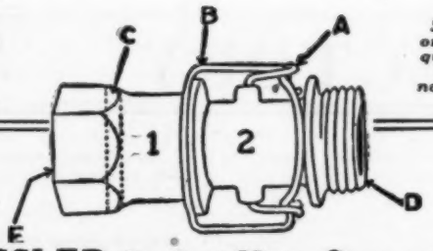
Meyer & Bro. Co., F., Peoria, Ill.
Milwaukee Corrugating Co., Mil., Ch'go, La Crosse, Kan. City
Mueller Furnace Co., L. J., Milwaukee, Wis.
Osborn Co., The J. M. & L. A., Cleveland, Ohio
Standard Furnace & Supply Co., Omaha, Neb.

The simplest hose coupling made

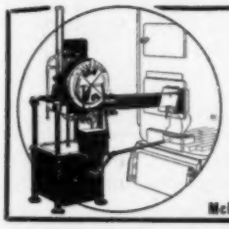



Snaps on or off quickly. Does not leak.

## HESSLER *Perfect* Hose Connection

YOU and your customers, everybody who uses a hose will welcome the Hessler Hose Connection.
It saves hose length and the hose, no kinking or twisting—no splashing, no leakage and you snap it on or off in a wink.
The Hessler will be a big, fast seller and a real profit maker.
Order a sample lot now—made in four sizes. Write today for price and circulars.

**H. E. HESSLER CO.** **Syracuse, New York**



## McILVAINE OIL BURNER

*Listed by Underwriters*

Adaptable to warm-air furnaces because the McILVAINE System of **continuous flame** insures no cracking or burning of fire pots, but produces **even, dependable heat.**

*Not an Intermittent Burner*

DEALERS: Write for information today.

**McILVAINE BURNER CORP., Dept. A, 749 Custer Ave., Evanston, Ill.**

# RYERSON SHEETS

**IMMEDIATE SHIPMENT FROM STOCK**

More than twenty kinds of sheets are carried in stock. Also Bars Angles, Rivets, Bolts, Tools and Metal-Working Machinery.
**Write for Journal and Stock List**

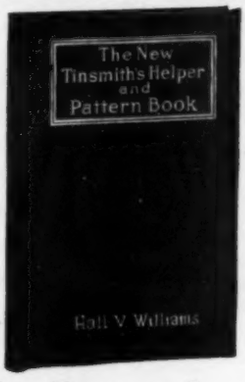
**JOSEPH T. RYERSON & SON Inc.**

Chicago Milwaukee Jersey City Boston Detroit St. Louis Cincinnati Cleveland Buffalo

*352 Pages*

*247 Figures*

*165 Tables*




*Flexible Leather Binding*

*Measures 4½x5 in.*

## One of the Best and Most Popular Books

on tinsmithing and elementary sheet metal work. This is the latest edition and the contents are new excepting the chapter on Mensuration, which has been re-arranged and amplified, and possibly some fifty pages of problems and tables which are classified to the phase of the work they cover.

### This Book Covers Simple Geometry and Every Phase of Modern Pattern Cutting

from the making of every type of Seam, Lap and Joint, to Conical Problems and Tinware, Elbows, Piping, Ducts, Gutters, Leaders, Cornice and Skylight Work and Furnace Fittings.

In fact an excellent all-around book for every man in the trade. Mr. Williams writes in an easy-to-read, helpful manner, giving you all the necessary details about each subject he handles.

You should add this widely read book to your collection now.

**PRICE $3.00**

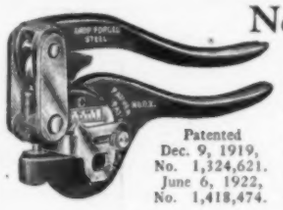
**AMERICAN ARTISAN**

**620 South Michigan Avenue, Chicago, Ill.**

# HYRO

## No. O. X. PUNCH

*Small but Powerful*



Patented Dec. 9, 1919, No. 1,324,621. June 6, 1922, No. 1,418,474.

Capacity—¼" hole in 14 gauge steel—punches to center of 2½" circle—measures 8" overall—weighs but 2⅝ lbs. Front pointer—Side Gauge—Punch with centering tip—Six stock sizes of punches and dies, ⅛", 5/32", 3/16", 7/32", ¼" and 17/64".

## No. X. X. PUNCH

*Wide Open Jaws*

Combination bench and hand punch—unusual deep throat, 3½" deep x 2⅛" high—equipped with adjustable back gauge, regulating depth of work—Automatic stripper—Capacity in steel, ¼" in 14 gauge, 3/16" in 16 gauge, or 17/32" in 18 gauge—measures 9" overall weighs 4½ lbs. Fifteen stock sizes of round punches and dies from ⅛" to 17/32".

Patented April 4, 1922, No. 1,411,890.

*Your Jobber Carries Them*

**HYRO MANUFACTURING CO., Inc.**

**202 VARICK ST. NEW YORK**

Trade **Verson** Mark

## Forming Dies

WE specialize in designing and making dies for forming sheet metal in any shape.

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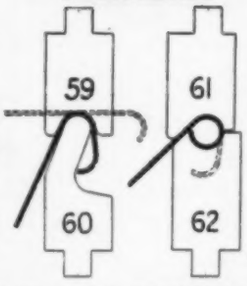


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Yearly subscribers to the AMERICAN ARTISAN may insert advertisements of not more than fifty words in our Want and Sales Columns WITHOUT CHARGE.

Such advertisements, however, must be limited to help or situation wanted, tools or equipment for sale, to exchange or to buy, business for sale or location desired and must reach our office by Thursday of the week of publication. This privilege is not extended to manufacturers or jobbers—or those making a business of buying and selling used machines, employment agencies and brokers.

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For Sale—A real, honest-to-goodness sheet metal shop and warm air heating business in a town of 6,000 that's booming; a wonderful opportunity for a live wire. Stock at invoice, tools at half invoice price. Will take about $3,200 to handle this. Address D-480, AMERICAN ARTISAN, 620 S. Michigan avenue, Chicago.

For Sale—Sheet metal and plumbing shop; well stocked and fully equipped; only shop of its kind in good town of 15,000, doing good business with contracts under construction aggregating $6,000. Owner wishes to sell because of failing health. Address F-480, AMERICAN ARTISAN, 620 S. Michigan avenue, Chicago.

For Sale—Roofing, heating and sheet metal business at 1684 Dorr street, Toledo, Ohio. Established over 18 years. Am in manufacturing business which requires all my time. For further information address A. W. Bishop, 1684 Dorr street, Toledo, Ohio. G-480

Wanted—Partner, preferably located in East. I have moderate capital to invest in an established furnace business; 25 years' successful experience. Address Garver-Homer Furnace Company, Coldwater, Michigan. C-480

For Sale—Well established sheet metal shop. Must sell on account of ill health. Address Fred Steinwax, DuQuoin, Ill. E-480

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Situation Wanted by all around first class sheet metal worker, layout man and foreman. Fully experienced in all classes of work including skylight, cornice, ventilation, blow pipes, etc. 28 years of experience. Married, sober, steady and a hard worker. Will go anywhere. State pay and particulars. Address Sheet Metal Worker, 6416 23rd Ave., Kenosha, Wis. K-479

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Situation Wanted as superintendent or foreman in a production or sheet metal shop. Have worked 10 years in a shop where they make everything that is possible out of sheet metal. Know safety rules and how to make machine guards. At liberty August 1st. State proposition in first letter. Address C. O Owen, % R. C. Wade, Arlington and Joy Avenue, Akron, Ohio. H-479

Steady position wanted with reliable concern by sheet metal worker and furnace man. Can read blue prints and knows the Standard Code. Good sheet metal draftsman. Married, sober and reliable; 37 years of age. Have steady employment but have best reasons for changing. Wisconsin preferred. Address W-479, AMERICAN ARTISAN, 620 S. Michigan avenue, Chicago, Ill.

Sheet metal mechanic specializing in ventilating work desires position. 20 years' experience in all branches of sheet metal work. Capable of taking charge of large jobs and installing same. First-class references. Employed at present, but will be open for position September 15. Address D-479, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

Situation wanted by an A1 combination man with 15 years' experience in sheet metal and plumbing. Can also handle hot water, steam and furnace heat. 39 years of age and married. Iowa or Nebraska preferred. Address L. C. Stoakes, 305 East First St., Anamosa, Iowa. F-479

Situation wanted by first class sheet metal worker. Can do some plumbing also pumps and windmills. 22 years' experience. Prefer Illinois. Can give good reference. Address J-479 AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

Young man experienced in pipe work wants position with lively concern. Can work from plans and lay out anything in pipe work. Steady work more essential than high wages. Address E-479, AMERICAN ARTISAN, 620 So. Michigan Ave., Chicago, Ill.

Good sheet metal, plumber and heating man open for a good job. 17 years' experience. Can go to work at once. Address S-478, AMERICAN ARTISAN, 620 S. Michigan Ave., Chicago, Ill.

## HELP WANTED

Man wanted for sheet metal and furnace work, also hot water and steam heat. State wages and experience in full in first letter. Do not reply unless you are an A1 man of 25 to 45 years of age and state whether you can come at once. Address The Werner Co., Tracy, Minn. C-479

Wanted—Pump and windmill man. One with some knowledge of plumbing and sheet metal work. Prefer young or middle-aged man. Steady work the year around. Town of 2,300 in northeastern Kansas. Address Moser Brothers, Sabetha, Kansas. M-479

Wanted at once—Man who has had experience keeping books in plumbing and electrical business, prefer one who is also a stenographer. Permanent job for one who can do the work. Wire for particulars to Antelope Valley Shops, Lancaster, California. O-479

Wanted — Young man who can do plumbing; also some sheet metal work. Write, giving your age, salary expected and when you can come. 8-hour day. Address Fesler's Tin and Plumbing Shop, Huntsville, Texas. P-479

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Wanted—Combination man. An intelligent, forceful, heating, plumbing and tinning man who knows his business and can supervise correct installation of the above. We have an unusual year around position for a business builder who can cut down on overhead and who will work heart and soul with his employer. Address Butters-Fetting Company, 461 11th avenue, Milwaukee, Wisconsin. A-480

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Wanted—Furnace salesman; must be A-1, understand Code and estimate and figure installation. Address X-479, AMERICAN ARTISAN, 620 S Michigan avenue, Chicago.

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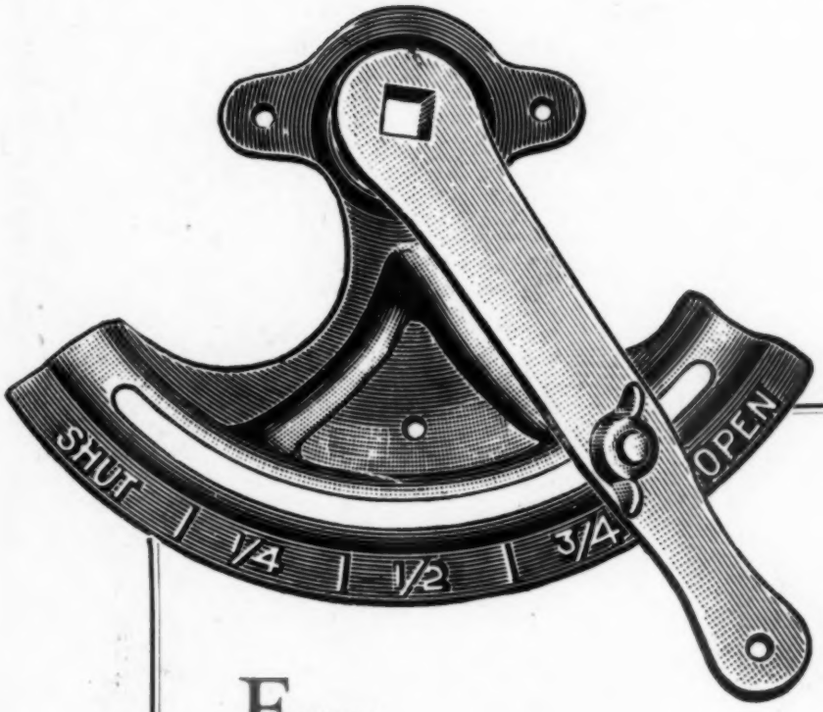


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